NAD

SERVICE MANUAL

C 720BEE

STEREO
RECEIVER

C 720BEE

STEREO
RECEIVER

TABLE OF CONTENTS

DESCRIPTION **PAGE**

SERVICE CAUTION..3

REAR PANEL/FRONT PANEL VIEW...4

SPECIFICATIONS...5-7

ALIGNMENT PROCEDURE..6-7

WIRING DIAGRAM..8

BLOCK DIAGRAM..9-15

ALIGNMENT PROCEDURE...16

SCHEMATICS...17-20

PCB LAYOUT...21-24

SPECIAL FUNCTION/TROUBLE SHOOTING GUIDE......................25

ELECTRICAL PARTS LIST...26-34

EXPLODED VIEW..35

EXPLODED VIEW PARTS LIST...36

PROTECT IC CHANGE 37

SERVICING PRECAUTIONS

CAUTION: Before servicing the Stereo Receiver covered by this service data and its supplements and addends, read and follow the *SAFETY PRECAUTIONS. NOTE:* if unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions in this publication, always follow the safety precautions.
Remember Safety First:

General Servicing Precautions

1. Always unplug the Stereo Receiver AC power cord from the AC power source before:
   (1) Removing or reinstalling any component, circuit board, module, or any other assembly.
   (2) Disconnecting or reconnecting any internal electrical plug or other electrical connection.
   (3) Connecting a test substitute in parallel with an electrolytic capacitor.

   Caution: A wrong part substitute or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.

2. Do not spray chemicals on or near this Stereo Receiver or any of its assemblies.

3. Unless specified otherwise in this service data, clean electrical contacts by applying an appropriate contact cleaning solution to the contacts with a pipe cleaner, cottontipped swab, or comparable soft applicator. Unless specified otherwise in this service data, lubrication of contacts is not required.

4. Do not defeat any plug/socket B+ voltage interlocks with which instruments covered by this service manual might be equipped.

5. Do not apply AC power to this Stereo Receiver and/or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.

6. Always connect test instrument ground lead to the appropriate ground before connecting the test instrument positive lead. Always remove the test instrument ground lead last.

Insulation Checking Procedure

Disconnect the attachment plug from the AC outlet and turn the power on. Connect an insulation resistance meter (500V) to the blades of the attachment plug. The insulation resistance between each blade of the attachment plug and accessible conductive parts (Note 1) should be more than 1 M-ohm.
Note 1: Accessible Conductive Parts including Metal panels, Input terminals, Earphone jacks, etc.

Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical Es devices are integrated circuits and some field effect transistors and semiconductor chip components.
The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handing any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reason prior to applying power to the unit under test.

2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.

3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.

4. Use only an antistatic solder removal device. Some solder removal devices not classified a "anti-static" can generate electrical charges sufficient to damage ES devices.

5. Do not use freonpropelled chemicals. These can generate electrical charge sufficient to damage ES devices.

6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil, or comparable conductive material).

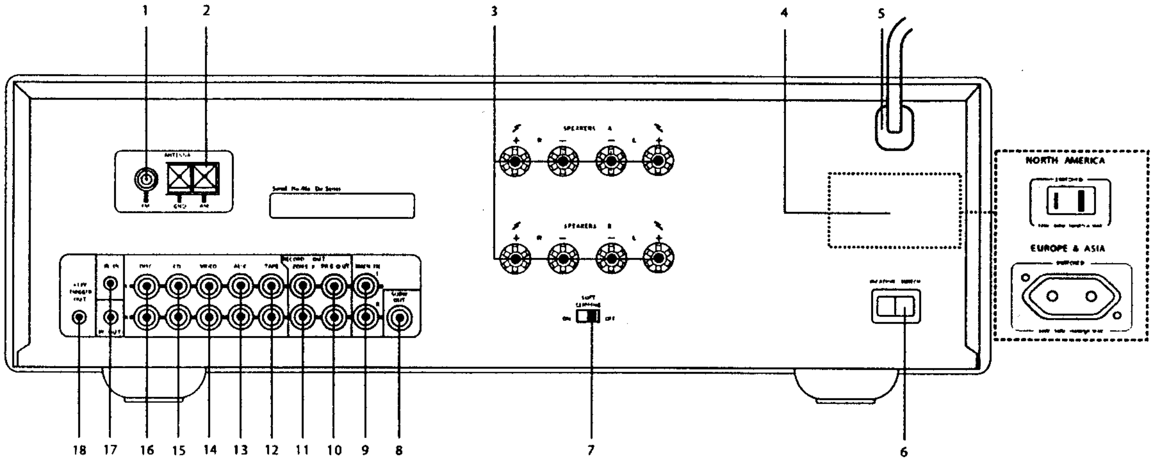
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

   Caution: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handing unpackaged replacement ES devices. (Normally harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

FRONT PANEL/REAR PANEL

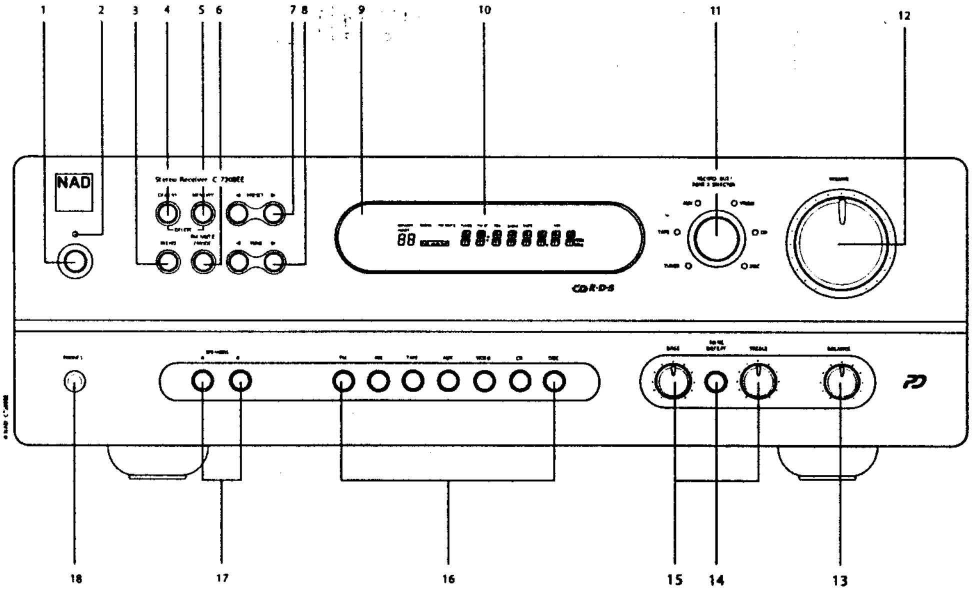
REAR PANEL



1
2
3
4
5
NORTH AMERICA
EUROPE & ASIA
SPEAKERS A
SPEAKERS B
18
17
16
15
14
13
12
11
10
9
8
7
6

1&2 FM&AM ANTENNA
3. SPEAKER A&B
4. SWITCHED AC OUTLET
5. AC LINE CORD
6. VACATION SWITCH ON/OFF
7. SOFT CLIPPING
8. SUBW OUT
9. MAIN IN
10. PRE-OUT
11. RECORD OUT/ZONE 2
12. TAPE IN
13. AUX INPUT
14. VIDEO INPUT
15. CD INPUT
16. DISC INPUT
17. IR INPUT/OUTPUT
18. +12V TRIGGER OUT

FRONT PANEL



1
2
3
4
5
6
7
8
9
10
11
12
NAD
18
17
16
15
14
13

1. POWER
2. POWER/STANDBY/PROTECTION LED
3. BLEND
4. DISPLAY
5. MEMORY
6. FM MUTE/MODE
7. PRESET
8. TUNE
9. IR RECEIVER
10. DISPLAY PANEL
11. RECORD OUT/ZONE 2 SELECTOR
12. VOLUME
13. BALANCE
14. TONE DEFEAT
15. TONE CONTROLS
16. INPUT SELECTOR
17. SPEAKER A&B
18. PHONES SOCKET

SPECIFICATIONS

NAD C720BEE Stereo Receiver
Note: Specifications are measured in accordance with EIA Standard RS-490 (IHF A-202) for amplifiers and ANSI-IEEE Standard 185(1975), i.e. input and converted to equivalent 300-ohm values.

Power Amplifier Section

CONTINUOUS AVERAGE POWER OUTPUT AT 8 OHMS (Minimum RMS power per channel, both channels driven, With no more than the rated distortion)		50W (17dBw)
Rated distortion (THD)(20Hz –20kHz)		≤0.03%
Channel Separation (MAIN IN, 20W Out at 8Ω,1kΩ shorted, 1kHz)		≥70dB
Clipping power, 1kHz (Maximum continuous power per channel)		68W
Dynamic Headroom at 8 ohms		3.4dB
Dynamic power (Maximum short-term power per channel)	**8ohms**	110W
	4ohms	160W
	2ohms	210W
Damping factor		≥100
Slew factor		≥50
Slew rate		≥20V/μsec
T.H.D and SMPTE I.M. (Distortion from 250mW to rated output)		≤0.03%
IHF I.M. (CCIF IM) and T.I.M distortion (From 250mW to rated output))		≤0.03%
Input impedance		22kΩ//470pF
Input sensitivity(For 50 Watts out)		≥700mV
Power amp gain		29dB

Preamplifier Section

Input Impedance	22kΩ//100pF

Signal-to-Noise ratio (A-weighted, 1kHz CD In, Pre-Out)		110dB ref 500mV
Rated distortion (THD)(20Hz –21kHz)		⩽0.03%
Channel Separation 2V CD IN, 2V Pre-Out,1kΩ shorted,1kHz		⩾70dB
Input Sensitivity		320mV for 1V out
Input Overload		⩾10V
Frequency response	tone defeat	+/-0.1dB
	tone on	+/-0.5dB
THD (SUB OUT) (2V CD in, 2V SUB out; 50Hz, 80kHz LPF)		⩽0.03%
THD (ZONE 2 OUT) (2V CD IN, 1kHz, 80kHz LPF)		⩽0.03%
Frequency Response(SUB OUT) 50Hz)		⩽3dB at 100Hz

Outputs

Preamp output impedance	80Ω
Zone2 output impedance	Source Z+ 600Ω
Controls	
Treble	±5dB at 10kHz
Bass	±8dB at 100Hz

Pre-in ,Power AMP out,input 2V

Signal-to-Noise ratio, A-weighted (500mV CD in, SPK out, 8Ω, A weighted)		98dB ref 1 W out
Rated distortion (THD)(20Hz –20kHz)		⩽0.03%
Input sensitivity (CD in, SPK out, at rated power, volume max.)		225mV
Channel Separation (CD in, 20W out at 8Ω, 1kΩ shorted, 1kHz)		⩾70dB
Frequency response	tone defeat	+/-0.1dB
	tone on	+/-0.5dB

Tuner FM Section(At 75kHz deviation for AH ; 40kHz for C)

Usual sensitivity	Mono, -30dB THD+N	⩽12dBuV
	Mono, 50 dB S/N	⩽25dBuV

Capture ratio (at 45 and 65 dBf)		⩽3 dB
AM rejection (at 65 and 85dBf)		⩾40 dB
Alternative channels Selectivity (RF±400KHz, at 30dB)		⩾40 dB
Image rejection(at usable sensitivity)		⩾70 dB
I.F. rejection (at usable sensitivity)		⩾70 dB
Pilot suppression (1kHz, 60dBu)		⩾55 dB
THD	Mono, 1kHz, 60dBu	⩽0.8%
	Stereo, 1kHz, 60dBu	⩽1%
Signal-to-noise ratio (Mono, 60dBu)		⩾60 dB
Frequency response(50Hz -15kHz)		±3dB
Stereo separation (1kHz; 60dBu)		⩾35 dB

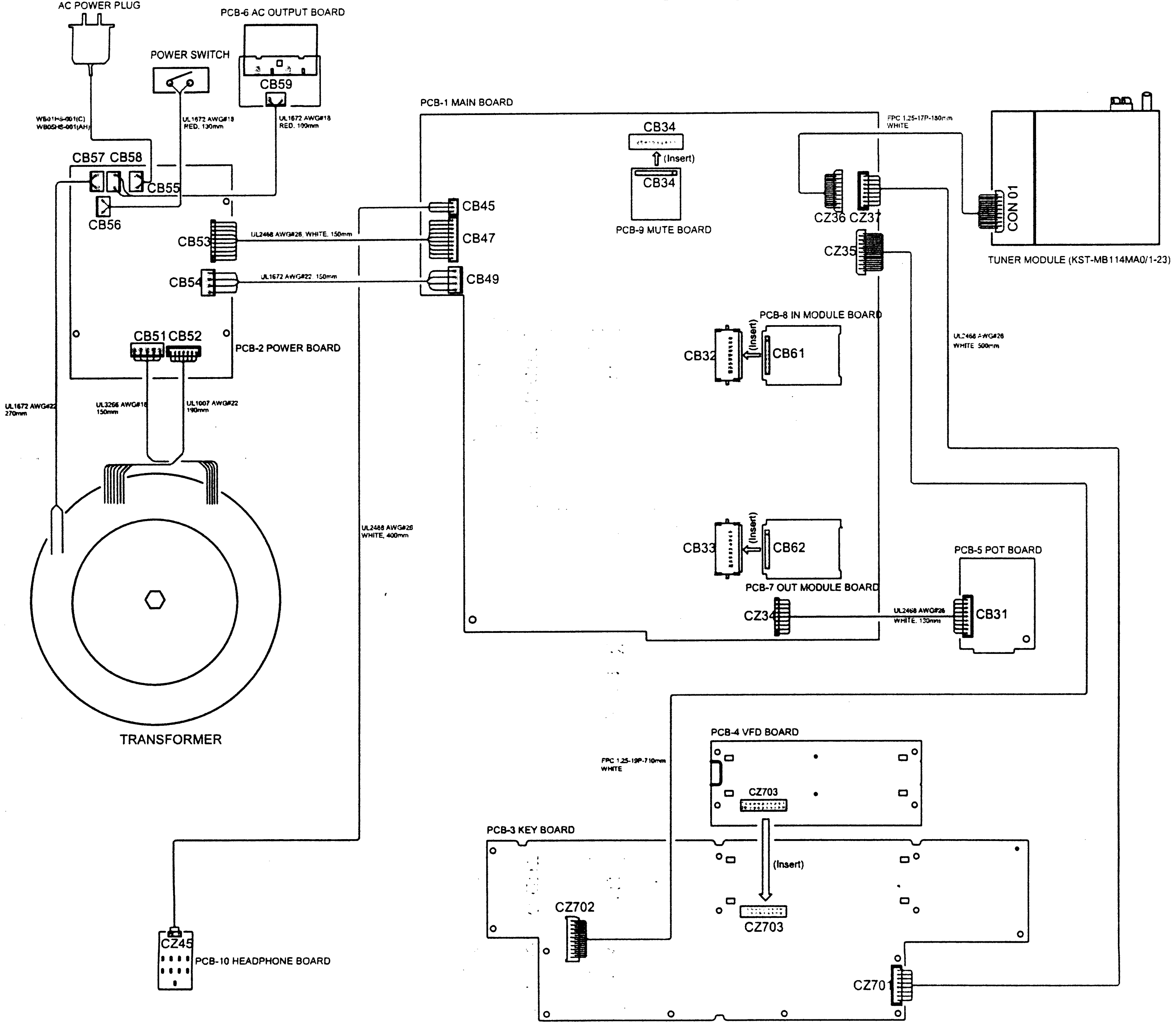
Tuner AM Section(30% mod)

Usable sensitivity (at S/N=20dB)	⩽60 dBμ
THD (74dBu input , 30% mod)	⩽3%
1 signal Selectivity(at usable sen.)	⩾20 dB
Image rejection(at usable sen.)	⩾28 dB
I.F. rejection (at usable sen.)	⩾40 dB
S/N ratio(30% mod, 80dBu input)	⩾40 dB

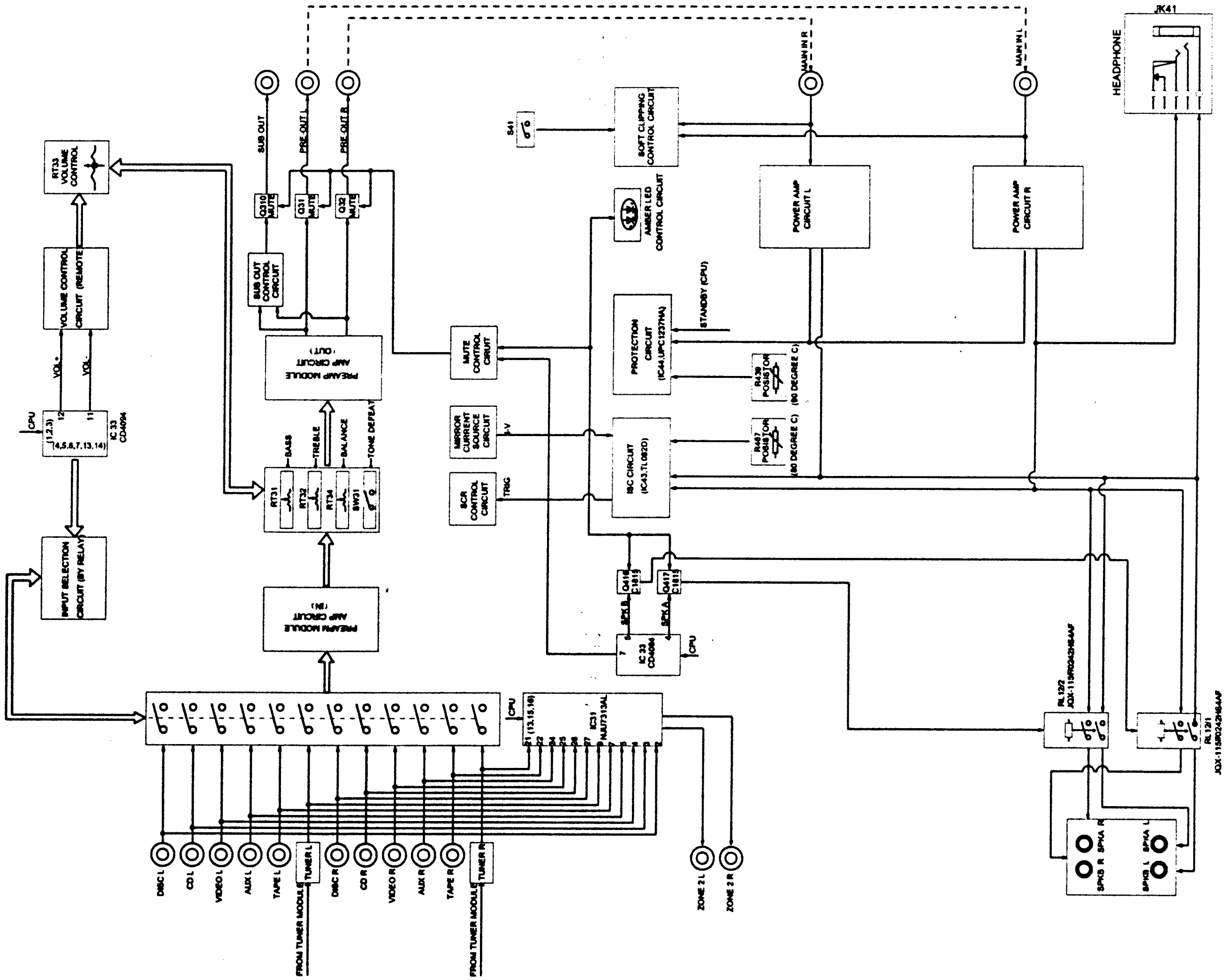
Physical Specifications

Width × Height × Depth	435x133x350mm
Net Weight	8.7kg
Shipping Weight	10.3kg
Power Consumption (50/60 Hz, at 110 or120VAC for AH, 230 or 240VAC for C)	110W

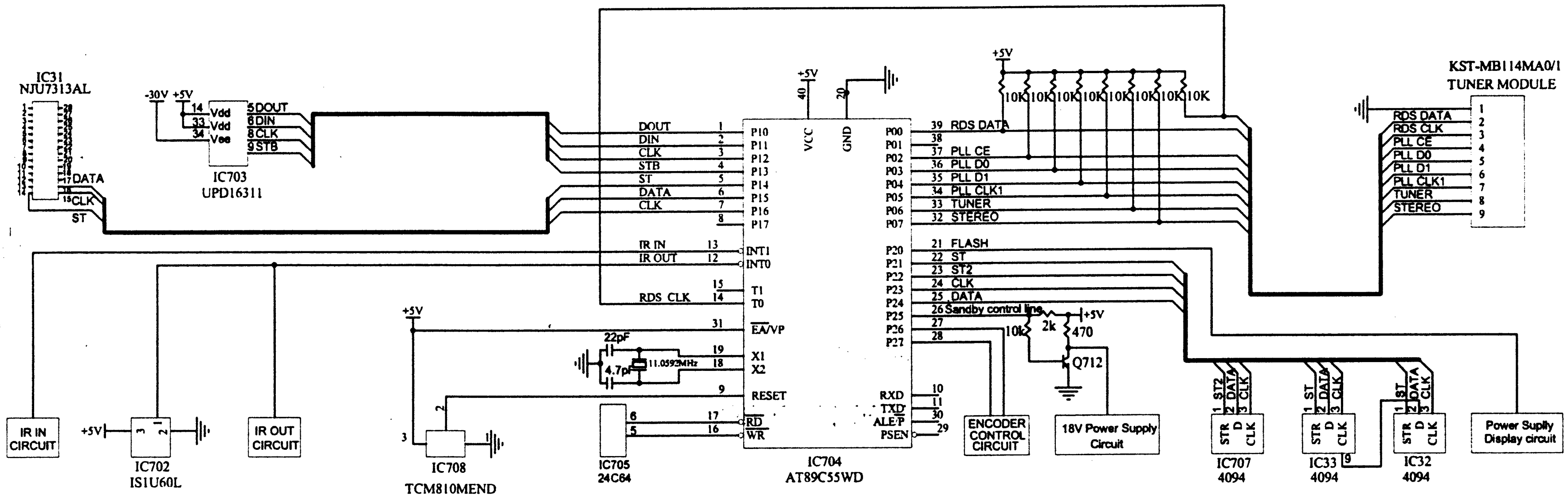
WIRING DIAGRAM


AC POWER PLUG
PCB-6 AC OUTPUT BOARD
POWER SWITCH
CB59
WB01HS-001(C)
WB05HS-001(AH)
UL1672 AWG#18
RED. 130mm
UL1672 AWG#18
RED. 100mm
PCB-1 MAIN BOARD
CB57 CB58
CB55
CB56
CB53
UL2468 AWG#26, WHITE, 150mm
CB54
UL1672 AWG#22, 150mm
CB45
CB47
CB49
CB34
(Insert)
CB34
PCB-9 MUTE BOARD
FPC 1.25-17P-180mm
WHITE
CZ36 CZ37
CON 01
CZ35
TUNER MODULE (KST-MB114MA0/1-23)
CB51 CB52
PCB-2 POWER BOARD
UL1672 AWG#22
270mm
UL3266 AWG#18
150mm
UL1007 AWG#22
190mm
PCB-8 IN MODULE BOARD
CB32
(Insert)
CB61
UL2468 AWG#26
WHITE 500mm
UL2468 AWG#26
WHITE, 400mm
CB33
(Insert)
CB62
PCB-7 OUT MODULE BOARD
PCB-5 POT BOARD
CZ34
UL2468 AWG#26
WHITE. 130mm
CB31
TRANSFORMER
PCB-4 VFD BOARD
FPC 1.25-19P-710mm
WHITE
CZ703
PCB-3 KEY BOARD
(Insert)
CZ702
CZ703
CZ45
PCB-10 HEADPHONE BOARD
CZ701

BLOCK DIAGRAM


RT33 VOLUME CONTROL
VOLUME CONTROL CIRCUIT (REMOTE)
VOL+
VOL-
CPU
(1,2,3)
12
11
(4,5,6,7,13,14)
IC 33 CD4094
INPUT SELECTION CIRCUIT (BY RELAY)
SUB OUT
PRE OUT L
PRE OUT R
Q310 MUTE
Q31 MUTE
Q32 MUTE
SUB OUT CONTROL CIRCUIT
PREAMP MODULE AMP CIRCUIT (OUT)
BASS
TREBLE
BALANCE
TONE DEFEAT
RT31
RT32
RT34
SW31
PREAMP MODULE AMP CIRCUIT (IN)
S41
SOFT CLIPPING CONTROL CIRCUIT
AMBER LED CONTROL CIRCUIT
MUTE CONTROL CIRUIT
MIRROR CURRENT SOURCE CIRCUIT
-V
SCR CONTROL CIRCUIT
TRIG
PROTECTION CIRCUIT (IC44,UPC1237HA)
STANDBY (CPU)
R439 POSISTOR (90 DEGREE C)
R467 POSISTOR (80 DEGREE C)
ISC CIRCUIT (IC43,TL062D)
Q416 C1815
Q417 C1815
SPK B
SPK A
7
5
4
IC 33 CD4094
CPU
MAIN IN R
MAIN IN L
POWER AMP CIRCUIT L
POWER AMP CIRCUIT R
JK41
HEADPHONE
RL12/2 JQX-115R024ZH6AAF
RL12/1 JQX-115R024ZH6AAF
SPKB R
SPKA R
SPKB L
SPKA L
CPU
(13,15,16)
IC31 NJU7313AL
21
22
24
25
26
27
8
7
6
5
3
2
DISC L
CD L
VIDEO L
AUX L
TAPE L
TUNER L
FROM TUNER MODULE
DISC R
CD R
VIDEO R
AUX R
TAPE R
TUNER R
FROM TUNER MODULE
ZONE 2 L
ZONE 2 R

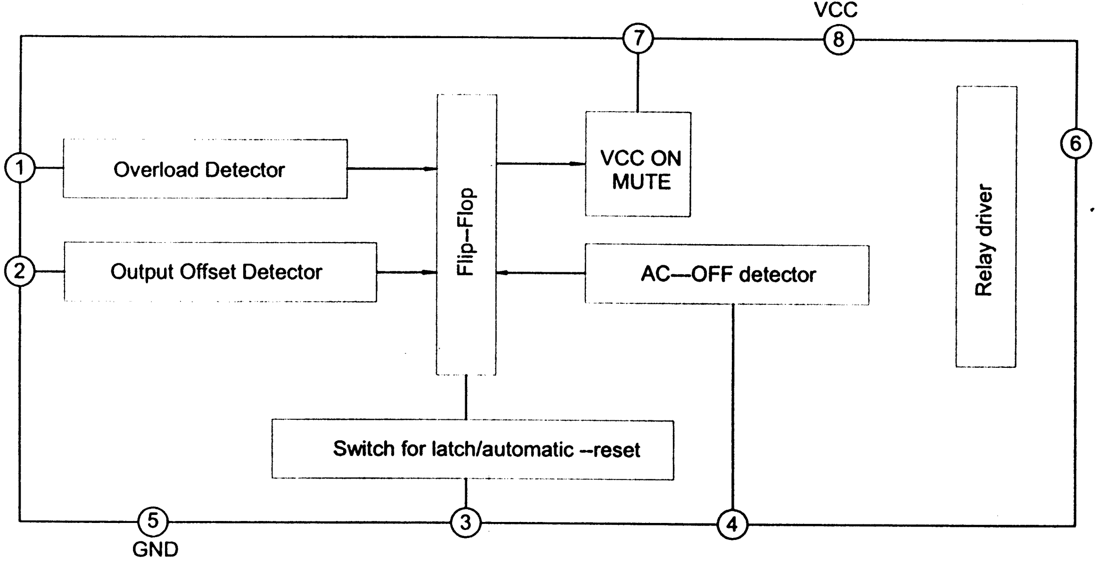
MICROPROCESSOR CONNECTION DIAGRAM


IC31
NJU7313AL
DATA
CLK
ST
-30V
+5V
Vdd
Vdd
Vee
DOUT
DIN
CLK
STB
IC703
UPD16311
DOUT
DIN
CLK
STB
ST
DATA
CLK
IR IN
IR OUT
RDS CLK
P10
P11
P12
P13
P14
P15
P16
P17
INT1
INT0
T1
T0
EA/VP
X1
X2
RESET
RD
WR
VCC
GND
+5V
22pF
4.7pF
11.0592MHz
IR IN CIRCUIT
+5V
IC702
IS1U60L
IR OUT CIRCUIT
+5V
IC708
TCM810MEND
IC705
24C64
IC704
AT89C55WD
P00
P01
P02
P03
P04
P05
P06
P07
P20
P21
P22
P23
P24
P25
P26
P27
RXD
TXD
ALE/P
PSEN
RDS DATA
PLL CE
PLL D0
PLL D1
PLL CLK1
TUNER
STEREO
FLASH
ST
ST2
CLK
DATA
Sandby control line
+5V
10K
10k
2k
470
+5V
Q712
ENCODER CONTROL CIRCUIT
18V Power Supply Circuit
ST2
DATA
CLK
STR
D
CLK
IC707
4094
ST
DATA
CLK
STR
D
CLK
IC33
4094
ST
DATA
CLK
STR
D
CLK
IC32
4094
Power Suplly Display circuit
KST-MB114MA0/1
TUNER MODULE
RDS DATA
RDS CLK
PLL CE
PLL D0
PLL D1
PLL CLK1
TUNER
STEREO

ICS BLOCK DIAGRAM

uPC1237HA

MAIN BOARD: IC44

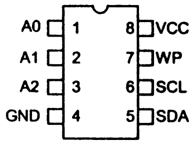


VCC
⑦
⑧
⑥
①
②
Overload Detector
Output Offset Detector
Flip--Flop
VCC ON MUTE
AC—OFF detector
Relay driver
Switch for latch/automatic --reset
⑤
GND
③
④

AT24C64A

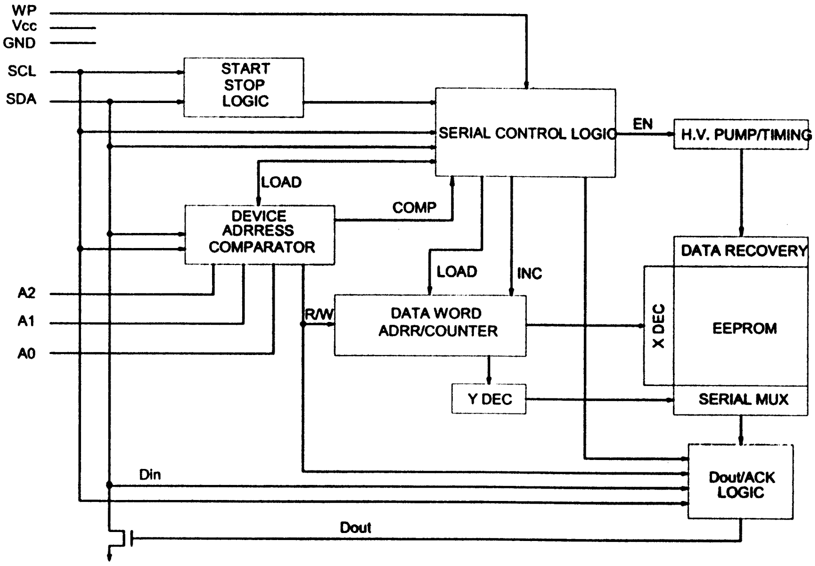
KEY BOARD: IC705

PIN CONFIGURATION



A0
A1
A2
GND
1
2
3
4
8
7
6
5
VCC
WP
SCL
SDA

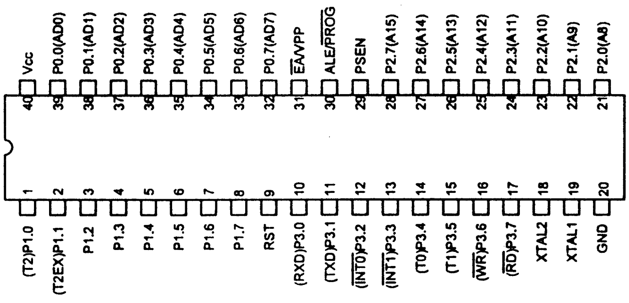
PIN NAME	FUNCTION
A0--A2	ADDRESS INPUTS
SDA	SERIAL DATA
SCL	SERIAL CLOCK INPUT
WP	WRITE PROTECT



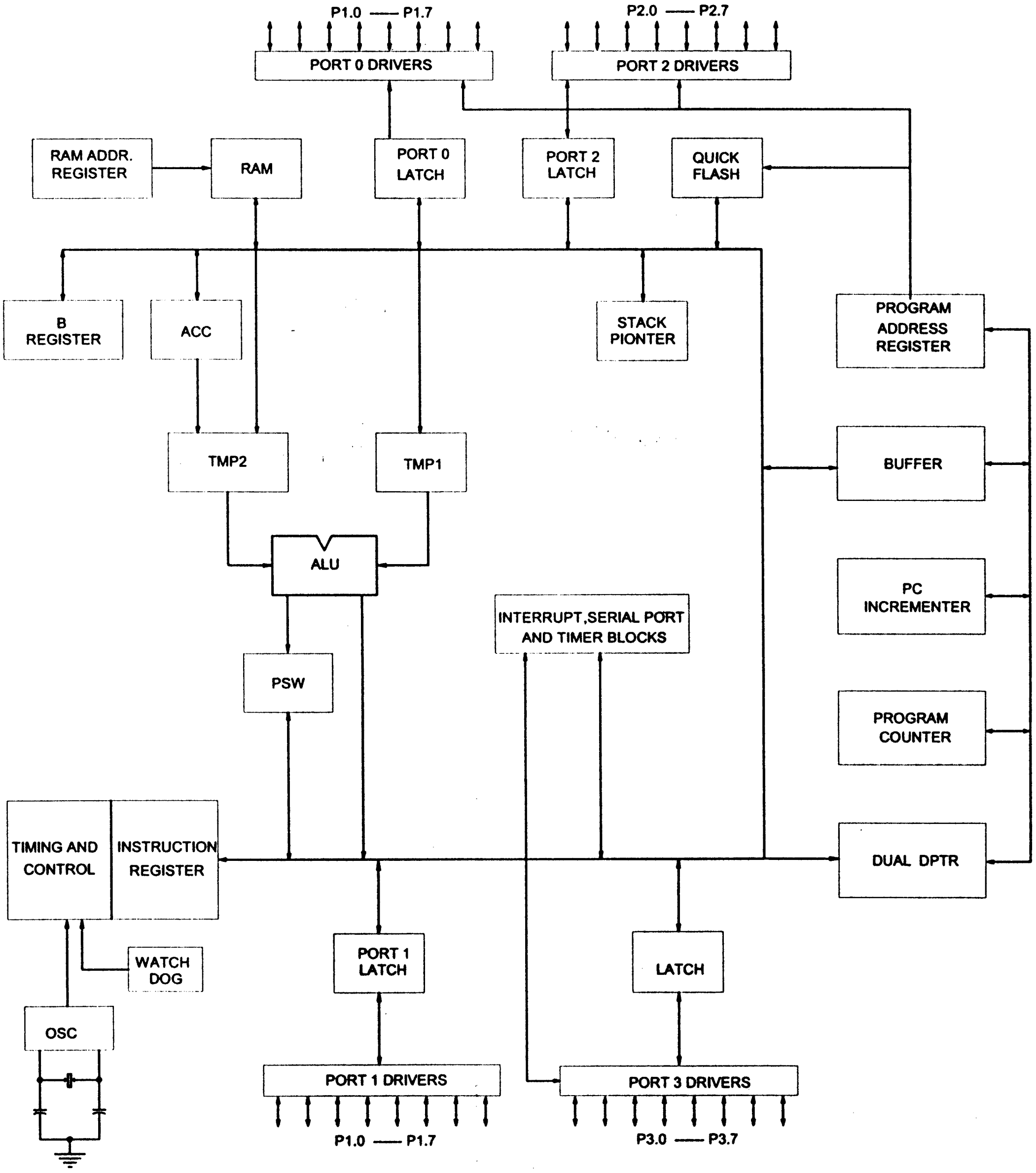
WP
Vcc
GND
SCL
SDA
START STOP LOGIC
SERIAL CONTROL LOGIC
EN
H.V. PUMP/TIMING
LOAD
COMP
DEVICE ADRRESS COMPARATOR
LOAD
INC
DATA RECOVERY
A2
A1
A0
R/W
DATA WORD ADRR/COUNTER
X DEC
EEPROM
Y DEC
SERIAL MUX
Din
Dout/ACK LOGIC
Dout

AT89C55WD
KEY BOARD : IC704

PIN CONFIGURATION



Vcc 40
P0.0(AD0) 39
P0.1(AD1) 38
P0.2(AD2) 37
P0.3(AD3) 36
P0.4(AD4) 35
P0.5(AD5) 34
P0.6(AD6) 33
P0.7(AD7) 32
EA/VPP 31
ALE/PROG 30
PSEN 29
P2.7(A15) 28
P2.6(A14) 27
P2.5(A13) 26
P2.4(A12) 25
P2.3(A11) 24
P2.2(A10) 23
P2.1(A9) 22
P2.0(A8) 21
1 (T2)P1.0
2 (T2EX)P1.1
3 P1.2
4 P1.3
5 P1.4
6 P1.5
7 P1.6
8 P1.7
9 RST
10 (RXD)P3.0
11 (TXD)P3.1
12 (INT0)P3.2
13 (INT1)P3.3
14 (T0)P3.4
15 (T1)P3.5
16 (WR)P3.6
17 (RD)P3.7
18 XTAL2
19 XTAL1
20 GND



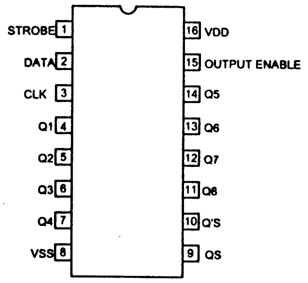
P1.0 —— P1.7
PORT 0 DRIVERS
P2.0 —— P2.7
PORT 2 DRIVERS
RAM ADDR. REGISTER
RAM
PORT 0 LATCH
PORT 2 LATCH
QUICK FLASH
B REGISTER
ACC
STACK PIONTER
PROGRAM ADDRESS REGISTER
TMP2
TMP1
BUFFER
ALU
PC INCREMENTER
INTERRUPT,SERIAL PORT AND TIMER BLOCKS
PSW
PROGRAM COUNTER
TIMING AND CONTROL
INSTRUCTION REGISTER
DUAL DPTR
WATCH DOG
PORT 1 LATCH
LATCH
OSC
PORT 1 DRIVERS
PORT 3 DRIVERS
P1.0 —— P1.7
P3.0 —— P3.7

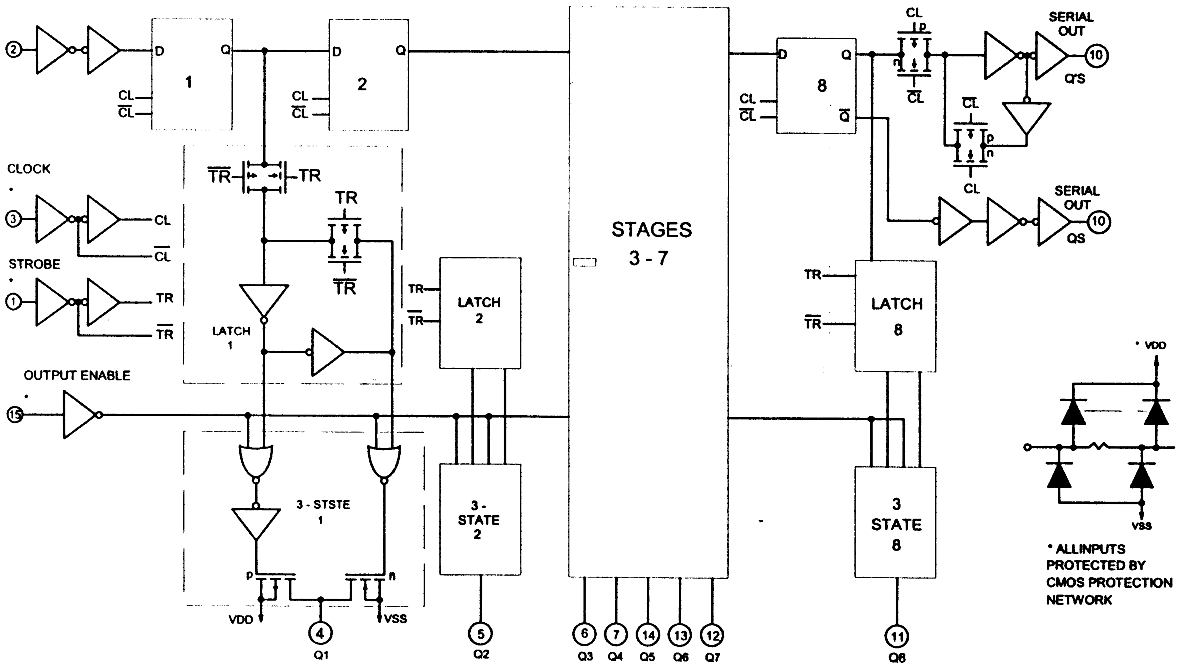
CD4094

MAIN BOARD:IC32&IC33

KEY BOARD: IC707

PIN CONFIGURATION

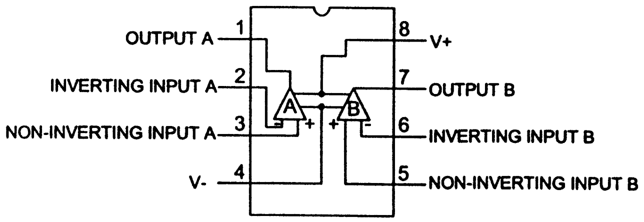

STROBE 1
DATA 2
CLK 3
Q1 4
Q2 5
Q3 6
Q4 7
VSS 8
16 VDD
15 OUTPUT ENABLE
14 Q5
13 Q6
12 Q7
11 Q8
10 Q'S
9 QS


2
D Q 1 CL CL
D Q 2 CL CL
CLOCK
3
CL
CL
STROBE
1
TR
TR
TR TR
TR
TR
LATCH 1
OUTPUT ENABLE
15
3 - STSTE 1
p n
VDD VSS
4 Q1
TR TR
LATCH 2
3 - STATE 2
5 Q2
STAGES 3 - 7
6 7 14 13 12
Q3 Q4 Q5 Q6 Q7
D Q 8 Q
CL CL
CL p n CL
CL p n CL
SERIAL OUT 10 Q'S
SERIAL OUT 10 QS
TR TR
LATCH 8
3 STATE 8
11 Q8
VDD
VSS

* ALLINPUTS PROTECTED BY CMOS PROTECTION NETWORK

TL082CP/D

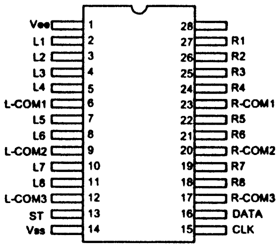
MAIN BOARD: IC3, IC4, IC34, IC43


OUTPUT A 1
INVERTING INPUT A 2
NON-INVERTING INPUT A 3
V- 4
8 V+
7 OUTPUT B
6 INVERTING INPUT B
5 NON-INVERTING INPUT B
A
B
- +
+ -

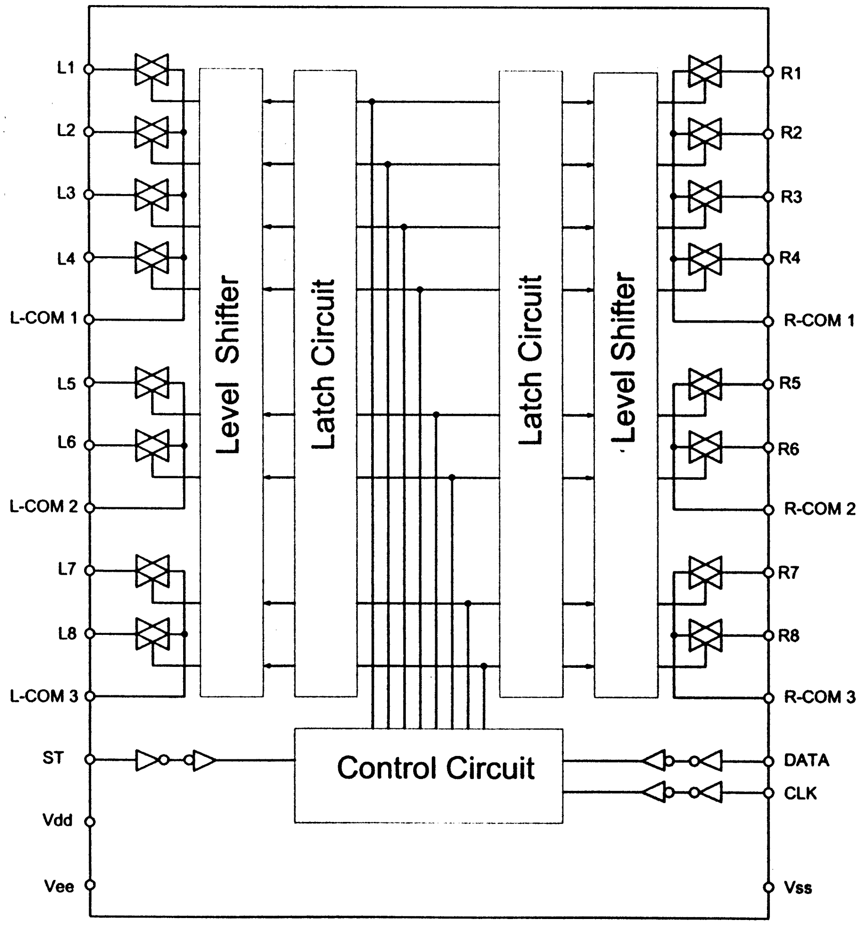
NJU7313AL

MAIN BOARD: IC31

PIN CONFIGURATION



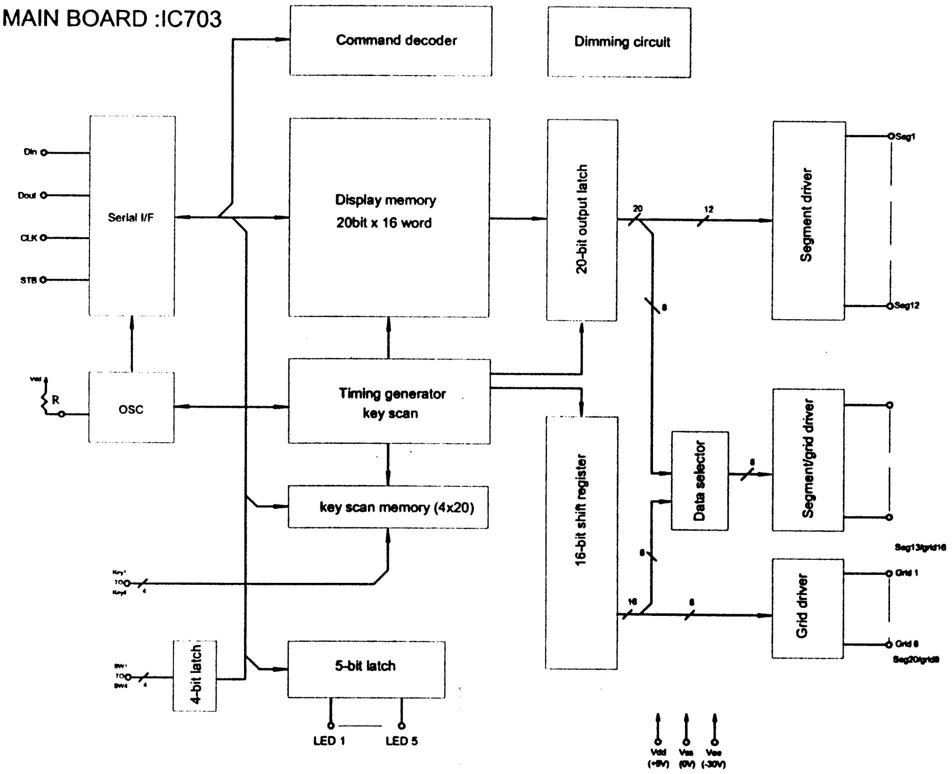
Vee 1
L1 2
L2 3
L3 4
L4 5
L-COM1 6
L5 7
L6 8
L-COM2 9
L7 10
L8 11
L-COM3 12
ST 13
Vss 14
28
27 R1
26 R2
25 R3
24 R4
23 R-COM1
22 R5
21 R6
20 R-COM2
19 R7
18 R8
17 R-COM3
16 DATA
15 CLK



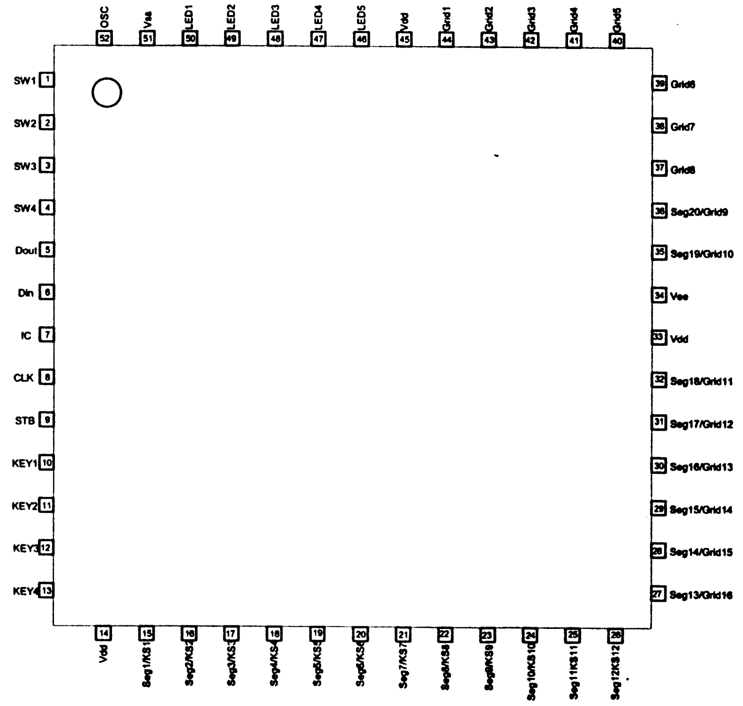
L1
L2
L3
L4
L-COM 1
L5
L6
L-COM 2
L7
L8
L-COM 3
ST
Vdd
Vee
Level Shifter
Latch Circuit
Latch Circuit
Level Shifter
Control Circuit
R1
R2
R3
R4
R-COM 1
R5
R6
R-COM 2
R7
R8
R-COM 3
DATA
CLK
Vss

uPD16311

MAIN BOARD :IC703


Command decoder
Dimming circuit
Din
Dout
CLK
STB
Serial I/F
Display memory
20bit x 16 word
20-bit output latch
20
12
8
Segment driver
Seg1
Seg12
Vdd
R
OSC
Timing generator
key scan
16-bit shift register
Data selector
8
Segment/grid driver
Seg13/grid16
key scan memory (4x20)
Key1
TO
Key4
4
8
16
8
Grid driver
Grid 1
Grid 8
Seg20/grid9
SW1
TO
SW4
4
4-bit latch
5-bit latch
LED 1
LED 5
Vdd
(+5V)
Vss
(0V)
Vee
(-30V)

PIN CONFIGURATION(Top View)


OSC 52
Vss 51
LED1 50
LED2 49
LED3 48
LED4 47
LED5 46
Vdd 45
Grid1 44
Grid2 43
Grid3 42
Grid4 41
Grid5 40
SW1 1
SW2 2
SW3 3
SW4 4
Dout 5
Din 6
IC 7
CLK 8
STB 9
KEY1 10
KEY2 11
KEY3 12
KEY4 13
39 Grid6
38 Grid7
37 Grid8
36 Seg20/Grid9
35 Seg19/Grid10
34 Vee
33 Vdd
32 Seg18/Grid11
31 Seg17/Grid12
30 Seg16/Grid13
29 Seg15/Grid14
28 Seg14/Grid15
27 Seg13/Grid16
14 Vdd
15 Seg1/KS1
16 Seg2/KS2
17 Seg3/KS3
18 Seg4/KS4
19 Seg5/KS5
20 Seg6/KS6
21 Seg7/KS7
22 Seg8/KS8
23 Seg9/KS9
24 Seg10/KS10
25 Seg11/KS11
26 Seg12/KS12

ALIGNMENT PROCEDURES

I. INITIAL

A. LOWEST VOLUME ADJUSTMENT

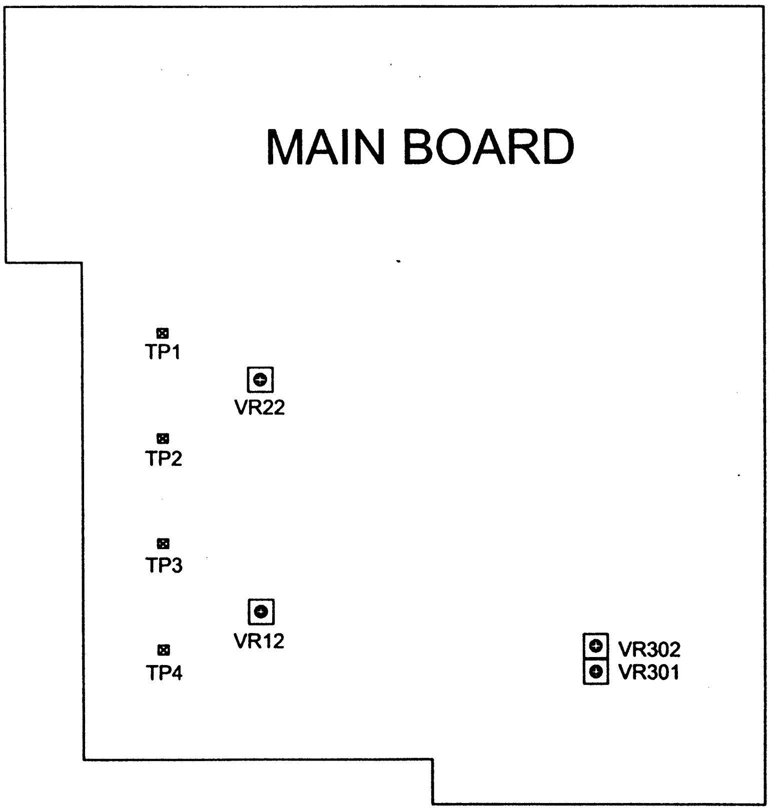
1. Tune the volume pot to lowest state.
2. Input a high voltage signal such as 5V from CD input.
3. Connect a oscilloscope to L channel binding posts.
4. Observing the oscilloscope,adjust VR301,make the output of speakers become to the lowest level.
5. Adjusting VR302,make R channel output become to the lowest level by same way.

B. IDLING CURRENT

1. Connect a DC voltmeter toTP1 and TP2 ,adjust VR22 for 4-5mV reading on voltmeter.
2. Connect a DC voltmeter toTP3 and TP4 ,adjust VR12 for 4-5mV reading on voltmeter.
3. Level power on for a minimum of 5 minutes

II. FINAL ADJUSTMENT

Repeat procedure A and B for lowest volume level and idling current alignment respectively.

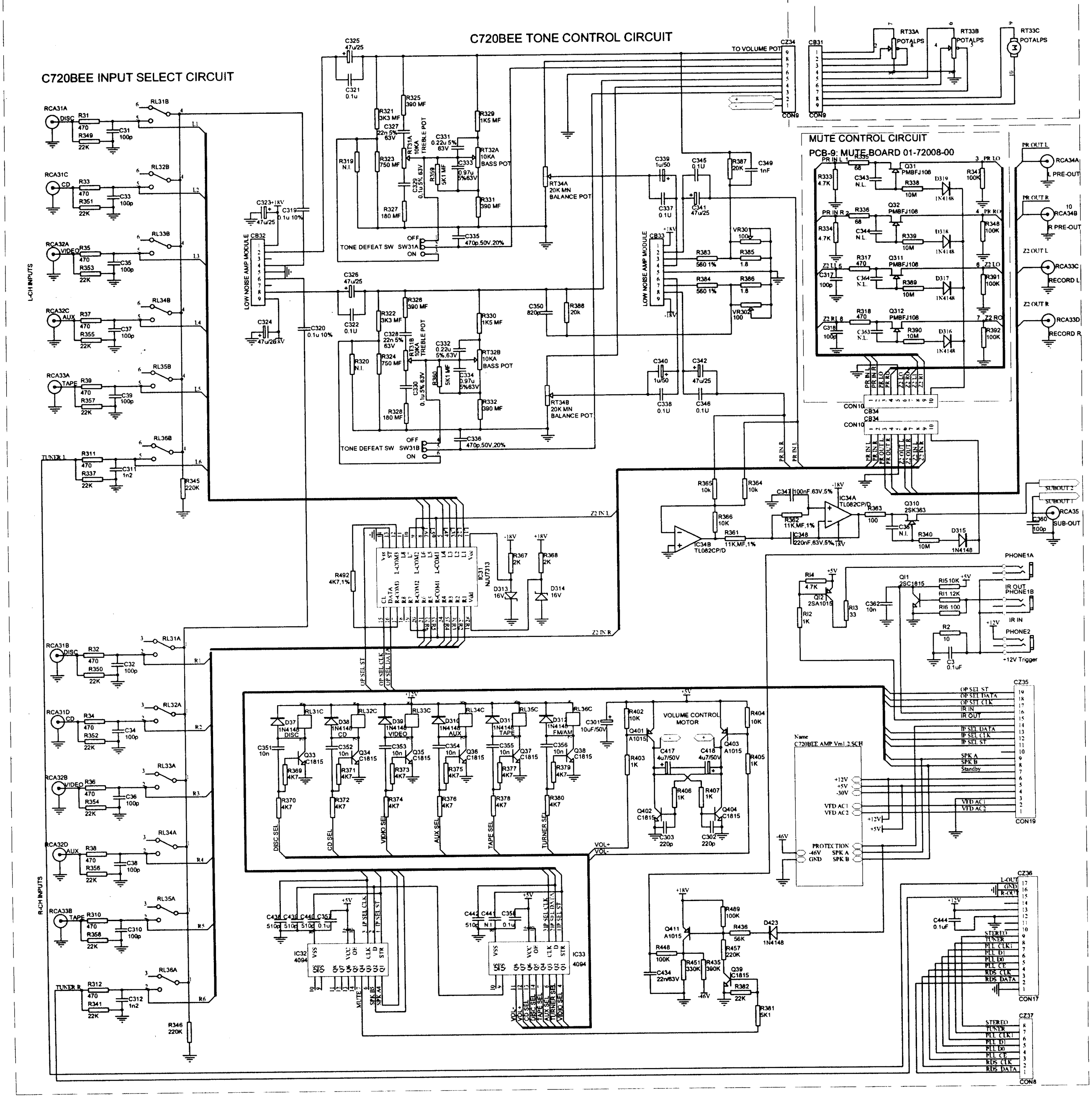


PREAMP AMP CIRCUIT FOR Vm1.7

PCB-1: MAIN BOARD FOR Vm5.0

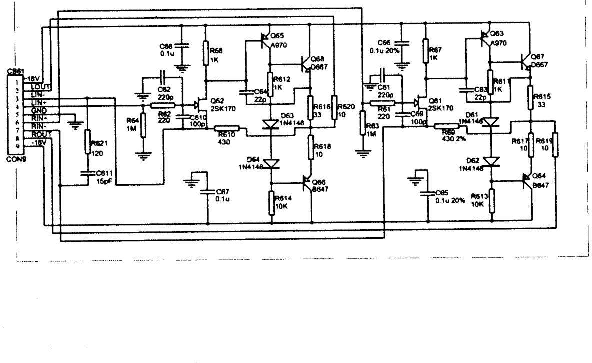
MOTO POT FOR Vm1.6

PCB-5: POT BOARD FOR Vm5.0


C720BEE TONE CONTROL CIRCUIT
C720BEE INPUT SELECT CIRCUIT
MUTE CONTROL CIRCUIT
PCB-9: MUTE BOARD 01-72008-00
TO VOLUME POT
CZ34
CB31
CON9
RT33A POTALPS
RT33B POTALPS
RT33C POTALPS
L-CH INPUTS
R-CH INPUTS
RCA31A DISC
RCA31C CD
RCA32A VIDEO
RCA32C AUX
RCA33A TAPE
TUNER L
RCA31B DISC
RCA31D CD
RCA32B VIDEO
RCA32D AUX
RCA33B TAPE
TUNER R
LOW NOISE AMP MODULE
CB32
CB33
RT31A 10KA TREBLE POT
RT32A 10KA BASS POT
RT34A 20K MN BALANCE POT
RT31B 10KA TREBLE POT
RT32B 10KA BASS POT
RT34B 20K MN BALANCE POT
TONE DEFEAT SW SW31A
TONE DEFEAT SW SW31B
OFF
ON
IC31 NJU7313
IC34A TL082CP/D
IC34B TL082CP/D
Q310 2SK363
SUBOUT
RCA35 SUB-OUT
RCA34A PRE-OUT
RCA34B PRE-OUT
RCA33C RECORD L
RCA33D RECORD R
PR OUT L
PR OUT R
Z2 OUT L
Z2 OUT R
CON10
CB34
Z2 IN L
Z2 IN R
PHONE1A
IR OUT
PHONE1B
IR IN
PHONE2
+12V Trigger
Q11 2SC1815
Q12 2SA1015
CZ35
CON19
VOLUME CONTROL MOTOR
Q401 A1015
Q402 C1815
Q403 A1015
Q404 C1815
C720BEE AMP Vm1.2.SCH
PROTECTION
SPK A
SPK B
GND
VFD AC1
VFD AC2
DISC SEL
CD SEL
VIDEO SEL
AUX SEL
TAPE SEL
TURNER SEL
IC32 4094
IC33 4094
Q411 A1015
Q39 C1815
D423 1N4148
CZ36
CON17
CZ37
CON8
STEREO
TUNER
PLL CLK
PLL DI
PLL DO
PLL CE
RDS CLK
RDS DATA
OP SEL ST
OP SEL DATA
OP SEL CLK
IP SEL DATA
IP SEL CLK
IP SEL ST
Standby

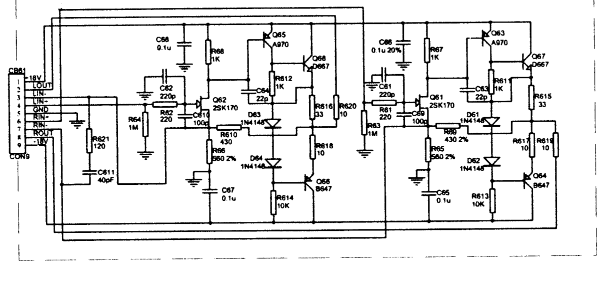
PREAMP OUT MODULE CIRCUIT FOR Vm1.6

PCB-7: OUT MODULE BOARD FOR Vm5.0

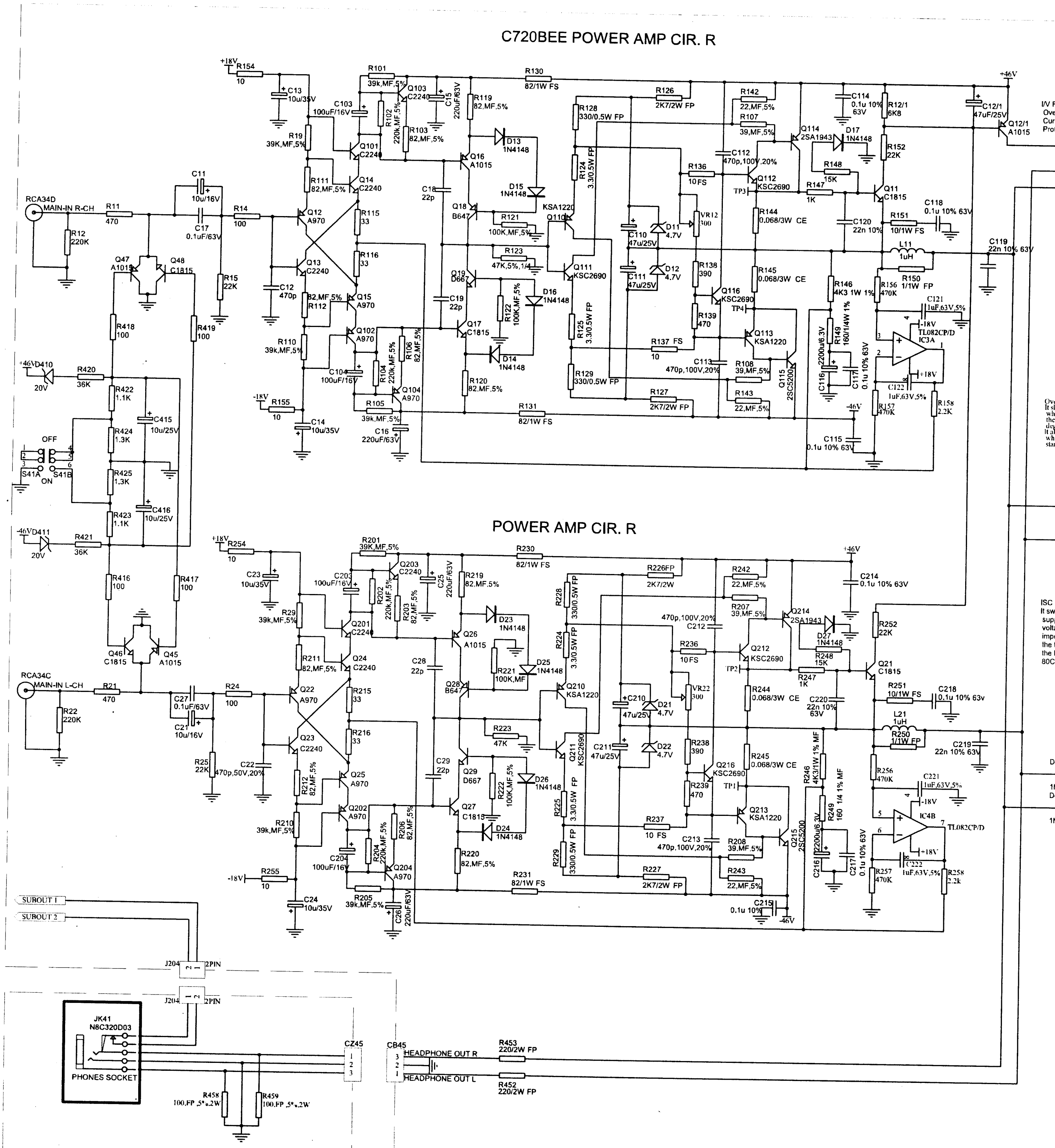

CB61
CON9
+18V
LOUT
LIN-
LIN-
GND
RIN-
RIN-
ROUT
-18V
Q61 2SK170
Q62 2SK170
Q63 A970
Q65 A970
Q64 B647
Q66 B647
Q67 D667
Q68 D667
D61 1N4148
D62 1N4148
D63 1N4148
D64 1N4148

PREAMP IN MODULE CIRCUIT FOR Vm1.6

PCB-8: IN MODLE BOARD FOR Vm5.0

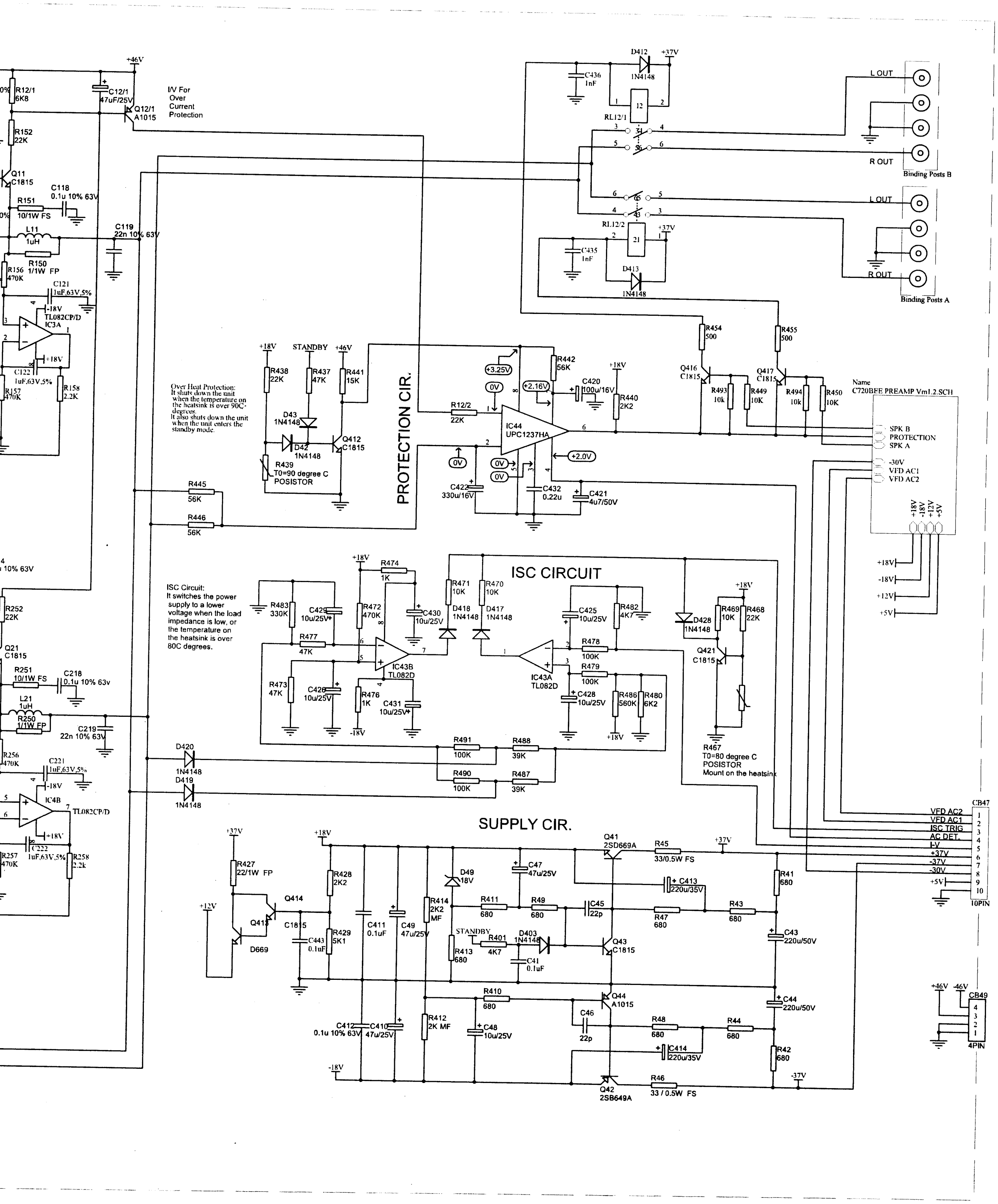

CB61
CON9
18V
LOUT
LIN-
LIN-
GND
RIN-
RIN-
ROUT
-18V
Q61 2SK170
Q62 2SK170
Q63 A970
Q65 A970
Q64 B647
Q66 B647
Q67 D667
Q68 D667
D61 1N4148
D62 1N4148
D63 1N4148
D64 1N4148

SCHEMATIC DIAGRAM (1/4)


C720BEE POWER AMP CIR. R
POWER AMP CIR. R
RCA34D
MAIN-IN R-CH
RCA34C
MAIN-IN L-CH
R11 470
R12 220K
R14 100
R21 470
R22 220K
R24 100
C11 10u/16V
C17 0.1uF/63V
C27 0.1uF/63V
C21 10u/16V
Q47 A1015
Q48 C1815
Q46 C1815
Q45 A1015
R418 100
R419 100
R416 100
R417 100
R420 36K
R421 36K
R422 1.1K
R423 1.1K
R424 1.3K
R425 1.3K
C415 10u/25V
C416 10u/25V
+46V D410 20V
-46V D411 20V
OFF
ON
S41A
S41B
+18V R154 10
+18V R254 10
-18V R155 10
-18V R255 10
C13 10u/35V
C14 10u/35V
C23 10u/35V
C24 10u/35V
R101 39k,MF,5%
R201 39K,MF,5%
Q103 C2240
Q203 C2240
C103 100uF/16V
C203 100uF/16V
C15 220uF/63V
C25 220uF/63V
R119 82,MF,5%
R219 82,MF,5%
R130 82/1W FS
R230 82/1W FS
R131 82/1W FS
R231 82/1W FS
Q101 C2240
Q201 C2240
Q12 A970
Q13 C2240
Q14 C2240
Q15 A970
Q22 A970
Q23 C2240
Q24 C2240
Q25 A970
Q16 A1015
Q26 A1015
Q17 C1815
Q27 C1815
Q18 B647
Q28 B647
Q19 D667
Q29 D667
D13 1N4148
D14 1N4148
D15 1N4148
D16 1N4148
D23 1N4148
D24 1N4148
D25 1N4148
D26 1N4148
Q110 KSA1220
Q111 KSC2690
Q210 KSA1220
Q211 KSC2690
Q112 KSC2690
Q113 KSA1220
Q114 2SA1943
Q115 2SC5200
Q116 KSC2690
Q212 KSC2690
Q213 KSA1220
Q214 2SA1943
Q215 2SC5200
Q216 KSC2690
Q11 C1815
Q21 C1815
Q12/1 A1015
D11 4.7V
D12 4.7V
D21 4.7V
D22 4.7V
D17 1N4148
D27 1N4148
VR12 300
VR22 300
C110 47u/25V
C111 47u/25V
C210 47u/25V
C211 47u/25V
R126 2K7/2W FP
R127 2K7/2W FP
R226 FP 2K7/2W
R227 2K7/2W FP
R128 330/0.5W FP
R129 330/0.5W FP
R142 22,MF,5%
R143 22,MF,5%
R242 22,MF,5%
R243 22,MF,5%
R107 39,MF,5%
R108 39,MF,5%
R207 39,MF,5%
R208 39,MF,5%
R144 0.068/3W CE
R145 0.068/3W CE
R244 0.068/3W CE
R245 0.068/3W CE
C112 470p,100V,20%
C113 470p,100V,20%
C212 470p,100V,20%
C213 470p,100V,20%
C114 0.1u 10% 63V
C214 0.1u 10% 63V
C115 0.1u 10% 63V
C215 0.1u 10%
C116 2200u/6.3V
C117 0.1u 10% 63V
C216 2200u/6.3V
C217 0.1u 10% 63V
C118 0.1u 10% 63V
C218 0.1u 10% 63v
C119 22n 10% 63V
C219 22n 10% 63V
C120 22n 10%
C220 22n 10% 63V
R151 10/1W FS
R251 10/1W FS
L11 1uH
L21 1uH
R150 1/1W FP
R250 1/1W FP
R146 4K3 1W 1%
R246 4K3/1W 1% MF
R149 160/1/4W 1%
R249 160 1/4 1% MF
IC3A TL082CP/D
IC4B TL082CP/D
C121 1uF,63V,5%
C122 1uF,63V,5%
C221 1uF,63V,5%
C222 1uF,63V,5%
R157 470K
R158 2.2K
R257 470K
R258 2.2k
R12/1 6K8
C12/1 47uF/25V
R152 22K
R252 22K
+46V
-46V
+18V
-18V
TP1
TP2
TP3
TP4
SUBOUT 1
SUBOUT 2
J204 2PIN
JK41 N8C320D03
PHONES SOCKET
CZ45
CB45
HEADPHONE OUT R
HEADPHONE OUT L
R453 220/2W FP
R452 220/2W FP
R458 100,FP,5%,2W
R459 100,FP,5%,2W

HEADPHONE OUT CIRCUIT FOR Vm1.7
PCB-10: HEADPHONE BOARD FOR Vm5.0

POWER AMP CIRCUIT FOR Vm1.7
PCB-1:MAIN BOARD FOR Vm5.0


PROTECTION CIR.
ISC CIRCUIT
SUPPLY CIR.
+46V
R12/1
6K8
C12/1
47uF/25V
Q12/1
A1015
R152
22K
Q11
C1815
C118
0.1u 10% 63V
R151
10/1W FS
L11
1uH
R150
1/1W FP
C119
22n 10% 63V
R156
470K
C121
1uF,63V,5%
-18V
TL082CP/D
IC3A
+18V
C122
1uF,63V,5%
R157
470K
R158
2.2K
R252
22K
Q21
C1815
R251
10/1W FS
C218
0.1u 10% 63v
L21
1uH
R250
1/1W FP
C219
22n 10% 63V
R256
470K
C221
1uF,63V,5%
IC4B
TL082CP/D
C222
1uF,63V,5%
R257
470K
R258
2.2k
D412
+37V
1N4148
C436
1nF
RL12/1
L OUT
R OUT
Binding Posts B
Binding Posts A
RL12/2
C435
1nF
D413
1N4148
R454
500
R455
500
Q416
C1815
Q417
C1815
R493
10k
R449
10K
R494
10k
R450
10K
Name
C720BEE PREAMP Vm1.2.SCH
SPK B
PROTECTION
SPK A
-30V
VFD AC1
VFD AC2
+18V
-18V
+12V
+5V
STANDBY
R438
22K
R437
47K
R441
15K
D43
1N4148
D42
1N4148
Q412
C1815
R439
T0=90 degree C
POSISTOR
R442
56K
+3.25V
0V
+2.16V
C420
100u/16V
R440
2K2
R12/2
22K
IC44
UPC1237HA
+2.0V
C422
330u/16V
C432
0.22u
C421
4u7/50V
R445
56K
R446
56K
R474
1K
R483
330K
C429
10u/25V
R472
470K
C430
10u/25V
R471
10K
R470
10K
D418
1N4148
D417
1N4148
R477
47K
IC43B
TL082D
R473
47K
C426
10u/25V
R476
1K
C431
10u/25V
C425
10u/25V
R482
4K7
R478
100K
R479
100K
IC43A
TL082D
C428
10u/25V
R486
560K
R480
6K2
D428
1N4148
R469
10K
R468
22K
Q421
C1815
R467
T0=80 degree C
POSISTOR
Mount on the heatsink
D420
1N4148
D419
1N4148
R491
100K
R488
39K
R490
100K
R487
39K
CB47
VFD AC2
VFD AC1
ISC TRIG
AC DET.
I-V
+37V
-37V
-30V
+5V
10PIN
R427
22/1W FP
Q414
Q413
D669
C1815
+12V
R428
2K2
C443
0.1uF
R429
5K1
C411
0.1uF
C49
47u/25V
D49
18V
C47
47u/25V
R414
2K2
MF
R411
680
R49
680
C45
22p
R413
680
R401
4K7
D403
1N4148
C41
0.1uF
Q41
2SD669A
R45
33/0.5W FS
C413
220u/35V
R47
680
R43
680
R41
680
Q43
C1815
C43
220u/50V
R410
680
Q44
A1015
C44
220u/50V
C46
22p
R48
680
R44
680
R412
2K MF
C48
10u/25V
C412
0.1u 10% 63V
C410
47u/25V
C414
220u/35V
R42
680
-18V
-37V
Q42
2SB649A
R46
33 / 0.5W FS
+46V
-46V
CB49
4PIN

I/V For Over Current Protection

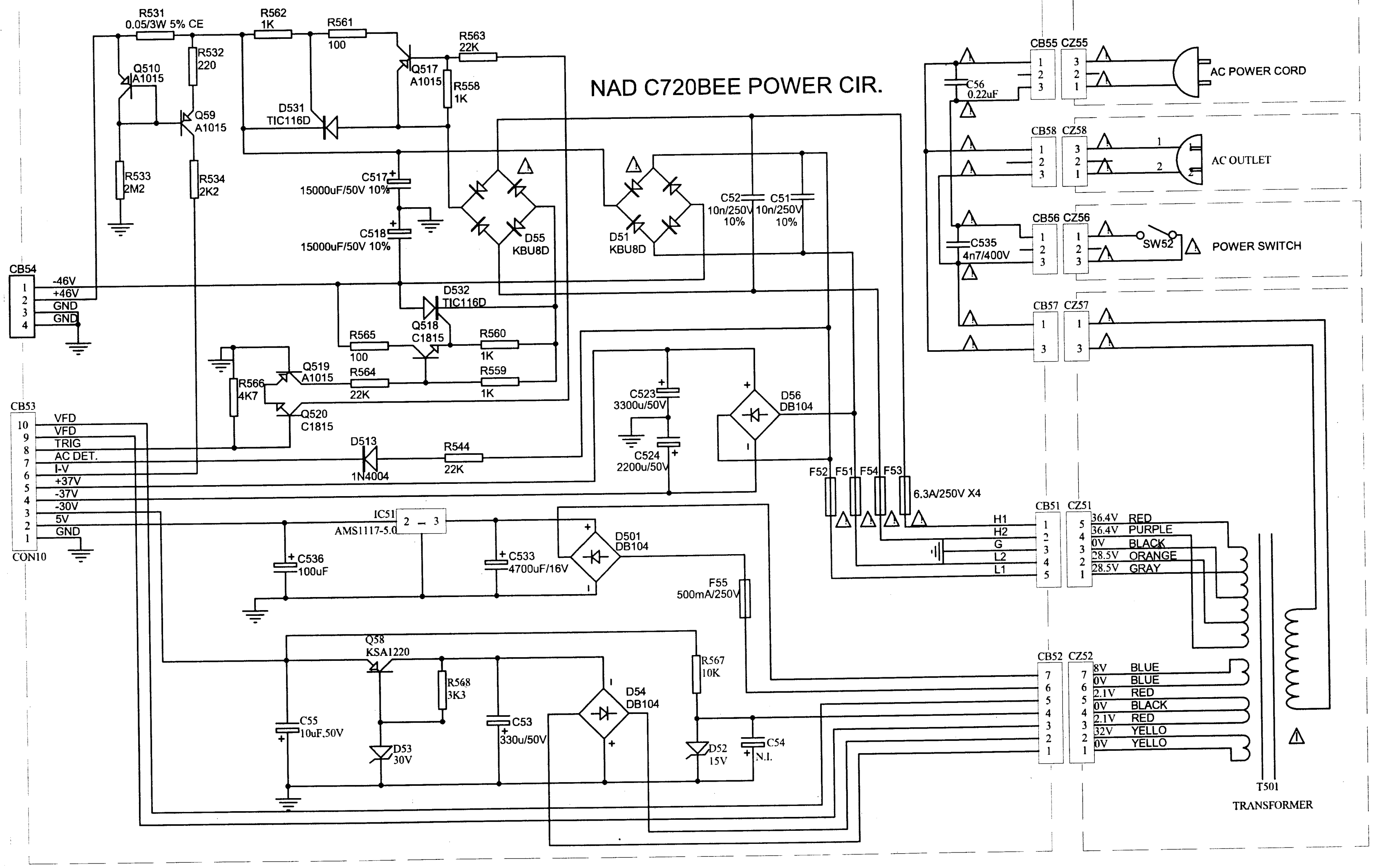
Over Heat Protection:
It shuts down the unit when the temperature on the heatsink is over 90C degrees.
It also shuts down the unit when the unit enters the standby mode.

ISC Circuit:
It switches the power supply to a lower voltage when the load impedance is low, or the temperature on the heatsink is over 80C degrees.

SCHEMATIC DIAGRAM (2/4)

POWER SUPPLY CIRCUIT FOR Vm1.6

PCB-2: POWER BOARD FOR Vm5.0



NAD C720BEE POWER CIR.
R531
0.05/3W 5% CE
R562
1K
R561
100
R563
22K
R532
220
Q510
A1015
Q59
A1015
Q517
A1015
R558
1K
D531
TIC116D
R533
2M2
R534
2K2
C517
15000uF/50V 10%
C518
15000uF/50V 10%
D55
KBU8D
D51
KBU8D
C52
10n/250V
10%
C51
10n/250V
10%
CB54
-46V
+46V
GND
GND
D532
TIC116D
Q518
C1815
R565
100
R560
1K
R564
22K
R559
1K
Q519
A1015
R566
4K7
Q520
C1815
CB53
VFD
VFD
TRIG
AC DET.
I-V
+37V
-37V
-30V
5V
GND
CON10
D513
1N4004
R544
22K
C523
3300u/50V
C524
2200u/50V
D56
DB104
F52
F51
F54
F53
6.3A/250V X4
IC51
AMS1117-5.0
C536
100uF
C533
4700uF/16V
D501
DB104
F55
500mA/250V
Q58
KSA1220
R568
3K3
R567
10K
C55
10uF,50V
D53
30V
C53
330u/50V
D54
DB104
D52
15V
C54
N.I.
CB55
CZ55
AC POWER CORD
C56
0.22uF
CB58
CZ58
AC OUTLET
CB56
CZ56
C535
4n7/400V
SW52
POWER SWITCH
CB57
CZ57
CB51
CZ51
H1
H2
G
L2
L1
36.4V RED
36.4V PURPLE
0V BLACK
28.5V ORANGE
28.5V GRAY
CB52
CZ52
8V BLUE
0V BLUE
2.1V RED
0V BLACK
2.1V RED
32V YELLO
0V YELLO
T501
TRANSFORMER

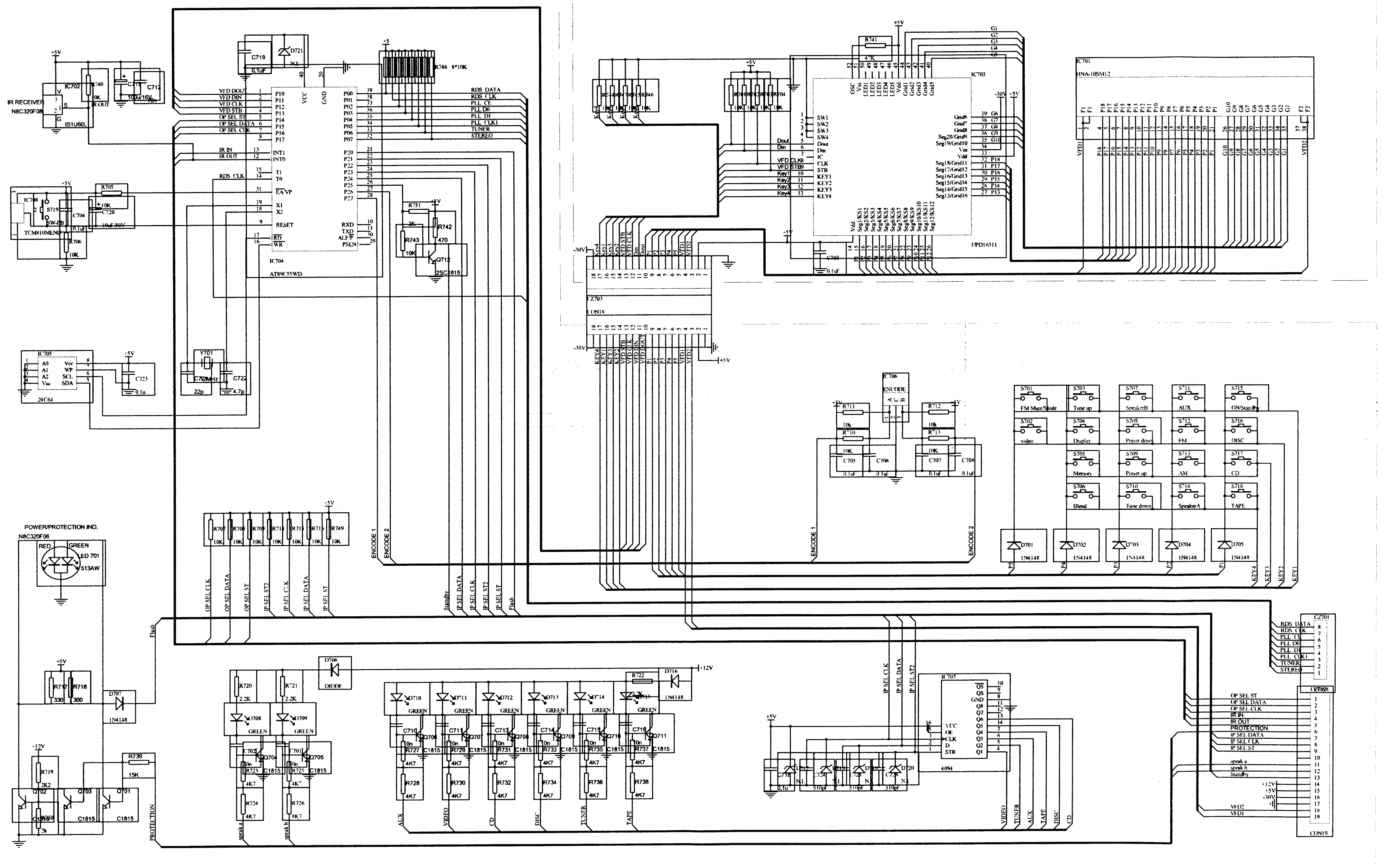
SCHEMATIC DIAGRAM (4/4)

KEY CONTROL CIRCUIT FOR Vm1.6

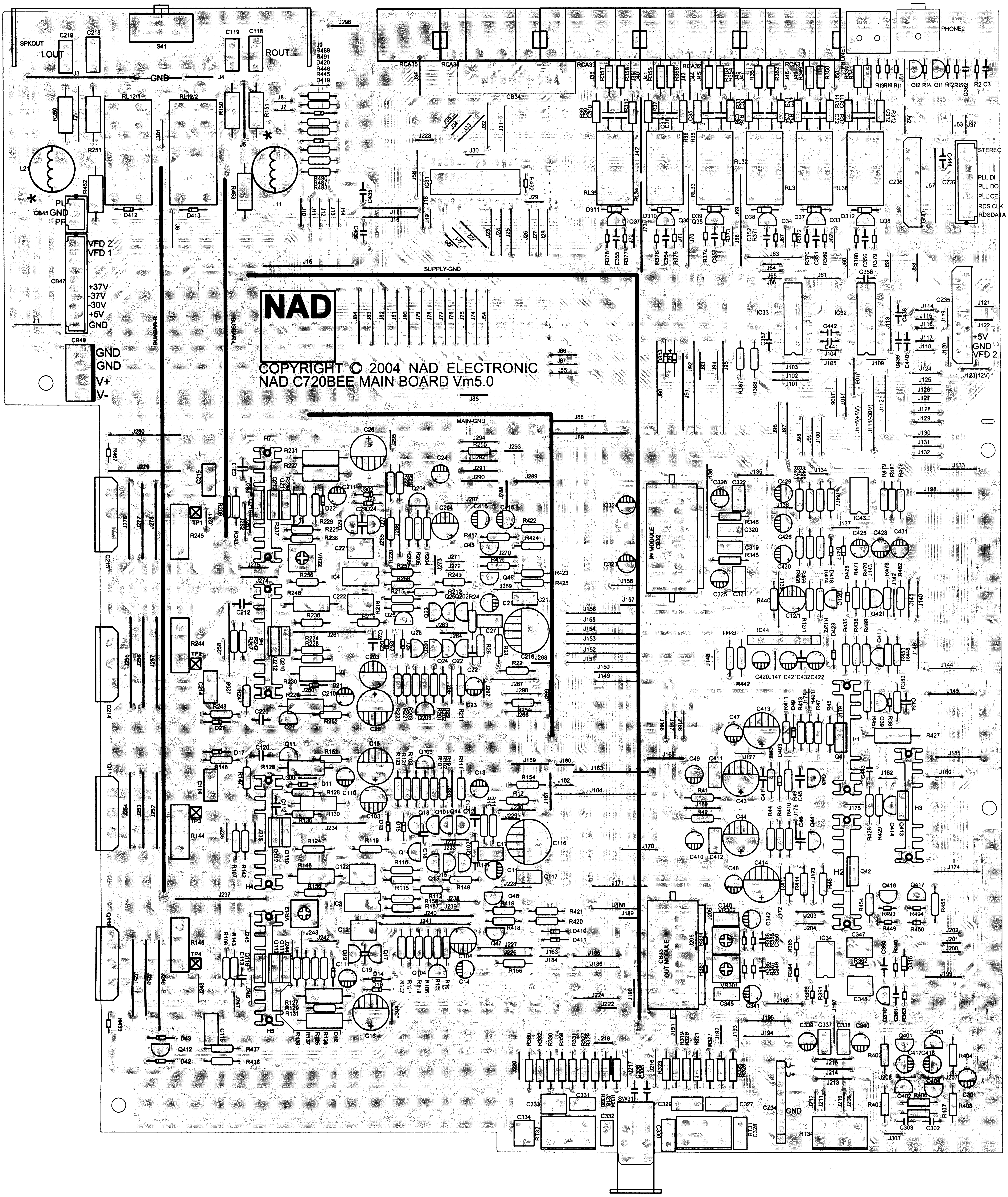
PCB-3: KEY BOARD FOR Vm5.0

VDF DISPLAY CONTROL CIRCUIT

PCB-4: VFD BOARD

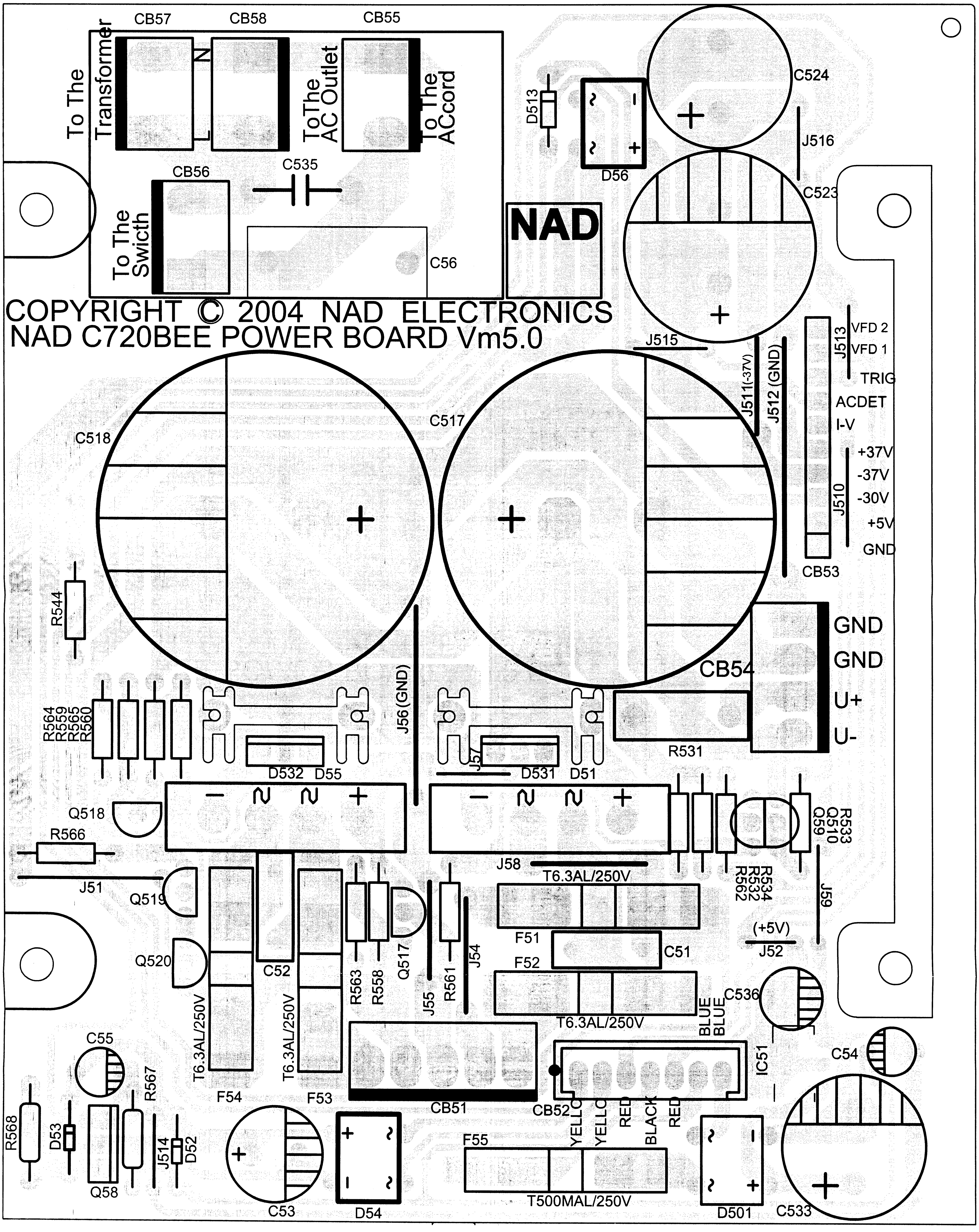

IR RECEIVER
N8C320F08
IC702
IS1U60L
C719
D721
R748 8*10K
IC704
AT89C55WD
VFD DOUT
VFD DIN
VFD CLK
VFD STB
OP SEL ST
OP SEL DATA
OP SEL CLK
IR IN
IR OUT
RDS CLK
RDS DATA
PLL CE
PLL D0
PLL DI
PLL CLK1
TUNER
STEREO
RESET
EA/VP
X1
X2
TCM810MENB
R705
S719
C720
R706
R751
R742
R743
Q712
2SC1815
IC705
24C64
C723
Y701
C721
C722
22p
4.7p
POWER/PROTECTION IND.
N8C320F06
RED
GREEN
LED 701
513AW
R707
R708
R709
R710
R711
R713
R749
OP SEL CLK
OP SEL DATA
OP SEL ST
OP SEL ST2
IP SEL CLK
IP SEL DATA
IP SEL ST
ENCODE 1
ENCODE 2
Standby
IP SEL ST2
Flash
R717
R718
D707
1N4148
R739
15K
R719
Q702
Q703
Q701
C1815
PROTECTION
R720
R721
D708
D709
GREEN
Q704
Q705
R723
R725
R724
R726
speak a
speak b
D706
DIODE
R722
D716
+12V
D710
D711
D712
D713
D714
D715
Q706
Q707
Q708
Q709
Q710
Q711
R727
R728
R729
R730
R731
R732
R733
R734
R735
R736
R737
R738
4K7
AUX
VIDEO
CD
DISC
TUNER
TAPE
IC701
HNA-10SM12
IC703
UPD16311
R741
C703
CZ703
CON18
KEY4
KEY3
KEY2
KEY1
IC706
ENCODE
R711
R710
R712
R713
C705
C706
C707
C708
S701 FM Mute/Mode
S702 video
S703 Tune up
S704 Display
S705 Memory
S706 Blend
S707 SpeakerB
S708 Preset down
S709 Preset up
S710 Tune down
S711 AUX
S712 FM
S713 AM
S714 SpeakerA
S715 ON/Standby
S716 DISC
S717 CD
S718 TAPE
D701
D702
D703
D704
D705
1N4148
IC707
4094
D717
D718
D719
D720
510pf
CZ701
CON19
speak a
speak b
Standby
+12V
+5V
-30V
VFD2
VFD1

PCB-1 : MAIN BOARD FOR Vm5.0

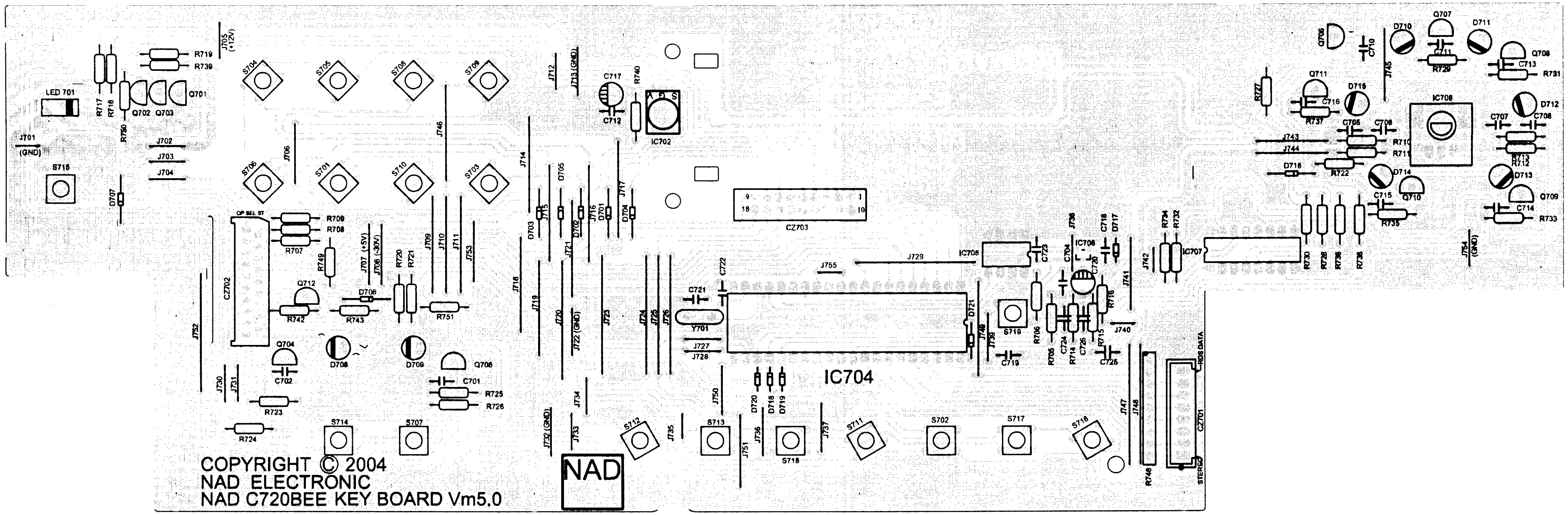


NAD
COPYRIGHT © 2004 NAD ELECTRONIC
NAD C720BEE MAIN BOARD Vm5.0
SPKOUT
LOUT
ROUT
GND
PHONE2
STEREO
PLL DI
PLL DO
PLL CE
RDS CLK
RDSDATA
VFD 2
VFD 1
+37V
-37V
-30V
+5V
GND
V+
V-
SUPPLY-GND
MAIN-GND
IN MODULE CB332
CB33 OUT MODULE
RCA35
RCA34
RCA33
RCA32
RCA31
CB34
CB45
CB47
CB49
TP1
TP2
TP3
TP4
IC3
IC4
IC31
IC32
IC33
IC34
IC43
IC44
SW31
J123(12V)
J110(+5V)
J111(-30V)

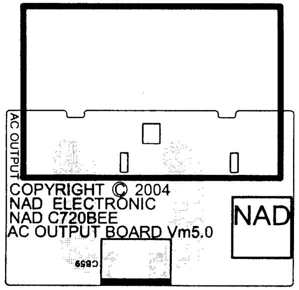
PCB-2: POWER BOARD FOR Vm5.0


CB57
CB58
CB55
To The Transformer
ToThe AC Outlet
To The ACcord
C524
D513
D56
J516
C523
CB56
C535
To The Swicth
C56
NAD
COPYRIGHT © 2004 NAD ELECTRONICS
NAD C720BEE POWER BOARD Vm5.0
J515
J511(-37V)
J512 (GND)
J513
VFD 2
VFD 1
TRIG
ACDET
I-V
+37V
-37V
-30V
+5V
GND
J510
CB53
C518
C517
R544
CB54
GND
GND
U+
U-
R564
R559
R565
R560
J56 (GND)
R531
D532
D55
J57
D531
D51
Q518
R566
J51
Q519
Q520
C52
R563
R558
Q517
J55
R561
J54
J58
T6.3AL/250V
F51
F52
C51
C536
R533
Q510
Q59
R534
R532
R562
J59
(+5V)
J52
BLUE
BLUE
C55
R567
T6.3AL/250V
T6.3AL/250V
F54
F53
CB51
CB52
IC51
C54
YELLO
YELLO
RED
BLACK
RED
R568
D53
Q58
J514
D52
C53
D54
F55
T500MAL/250V
D501
C533

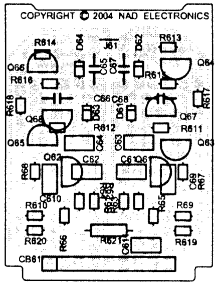
PCB-3: KEY BOARD FOR Vm5.0


COPYRIGHT © 2004
NAD ELECTRONIC
NAD C720BEE KEY BOARD Vm5.0
NAD
IC704
IC702
IC706
IC707
IC708
CZ701
CZ702
CZ703
LED 701

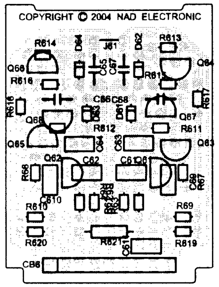
PCB-6: AC OUT BOARD FOR Vm5.0


AC OUTPUT
COPYRIGHT © 2004
NAD ELECTRONIC
NAD C720BEE
AC OUTPUT BOARD Vm5.0
NAD
CB59

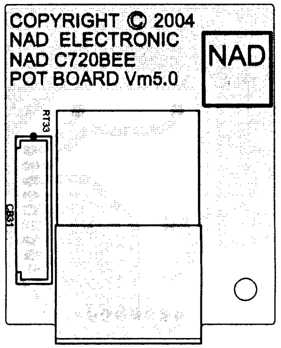
PCB-8: IN MODULE BOARD FOR Vm5.0


COPYRIGHT © 2004 NAD ELECTRONICS
CB61

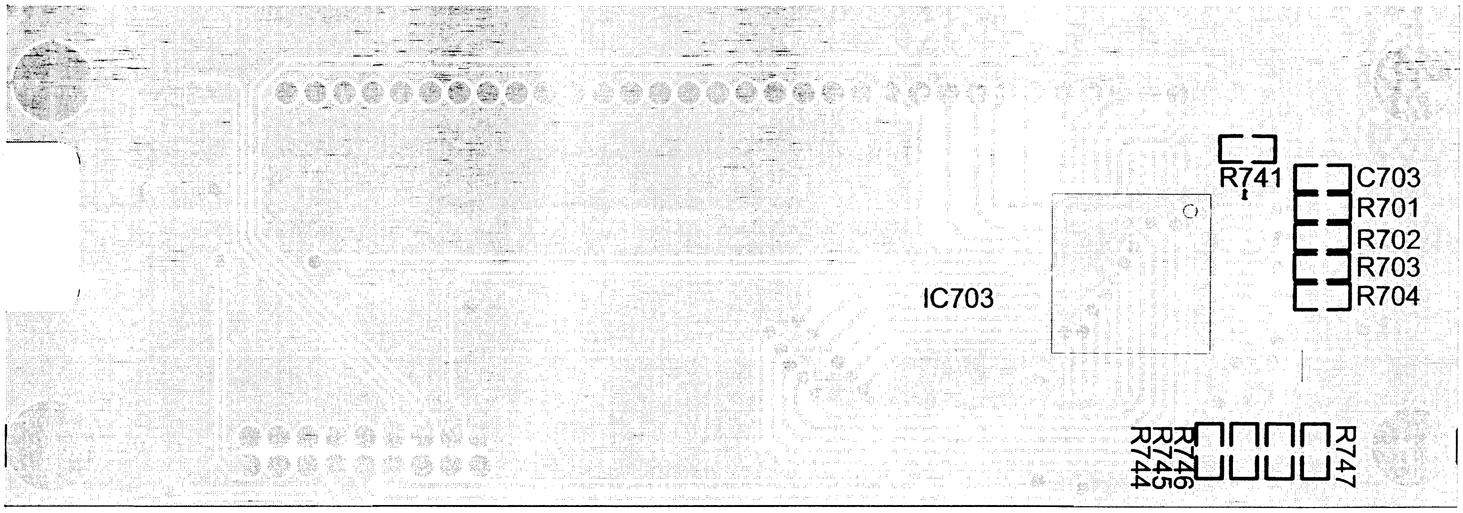
PCB-7:OUT MODULE BOARD FOR Vm5.0


COPYRIGHT © 2004 NAD ELECTRONIC
CB6

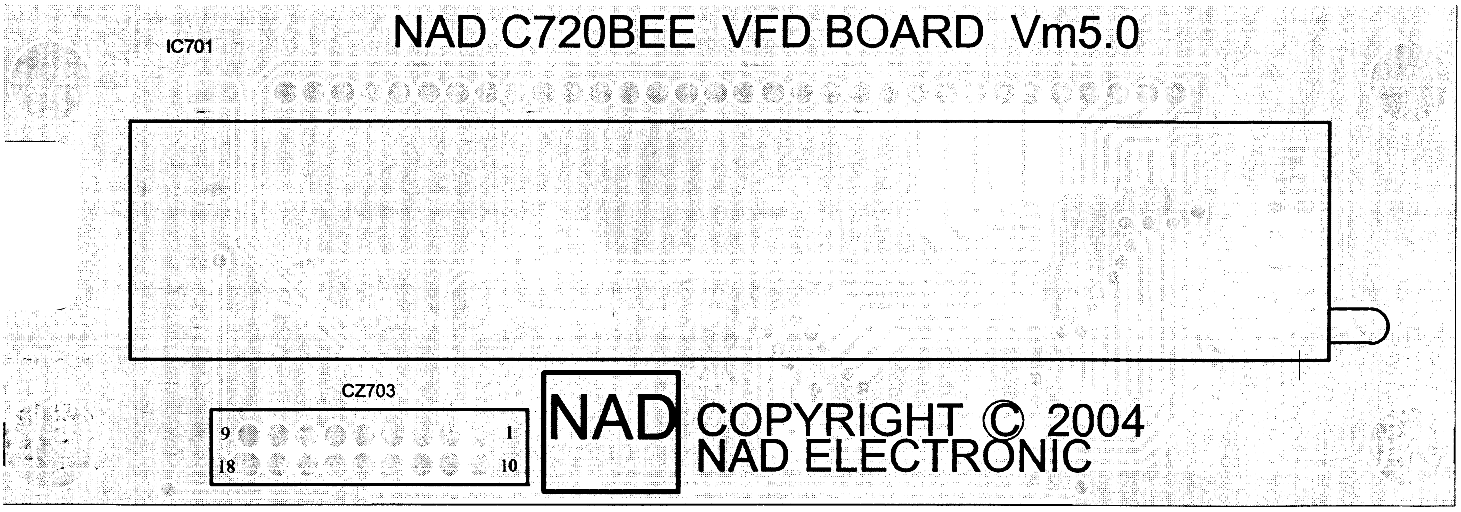
PCB-5: POT BOARD FOR Vm5.0


COPYRIGHT © 2004
NAD ELECTRONIC
NAD C720BEE
POT BOARD Vm5.0
NAD
R733
CB31

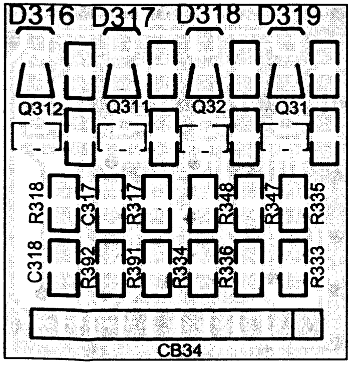
PCB-3: KEY BOARD (BOTTOM VIEW)


R741
C703
R701
R702
R703
R704
IC703
R746
R745
R744
R747

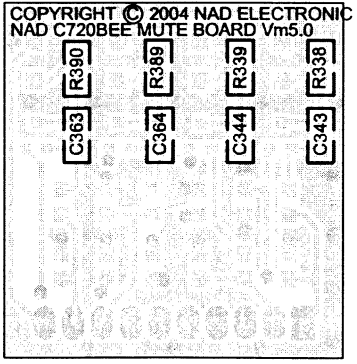
PCB-3: KEY BOARD (TOP VIEW)


IC701
NAD C720BEE VFD BOARD Vm5.0
CZ703
9
1
18
10
NAD
COPYRIGHT © 2004
NAD ELECTRONIC

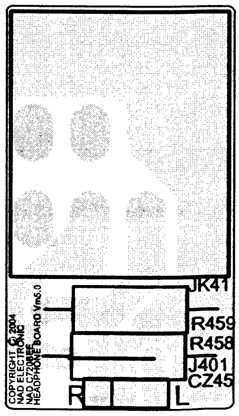
PCB-9: MUTE BOARD (BOTTOM VIEW)


D316
D317
D318
D319
Q312
Q311
Q32
Q31
R318
C317
R317
R348
R347
R335
C318
R392
R391
R334
R336
R333
CB34

PCB-9: MUTE BOARD (TOP VIEW)


COPYRIGHT © 2004 NAD ELECTRONIC
NAD C720BEE MUTE BOARD Vm5.0
R390
R389
R339
R338
C363
C364
C344
C343

PCB-10:HEADPHONE BOARD

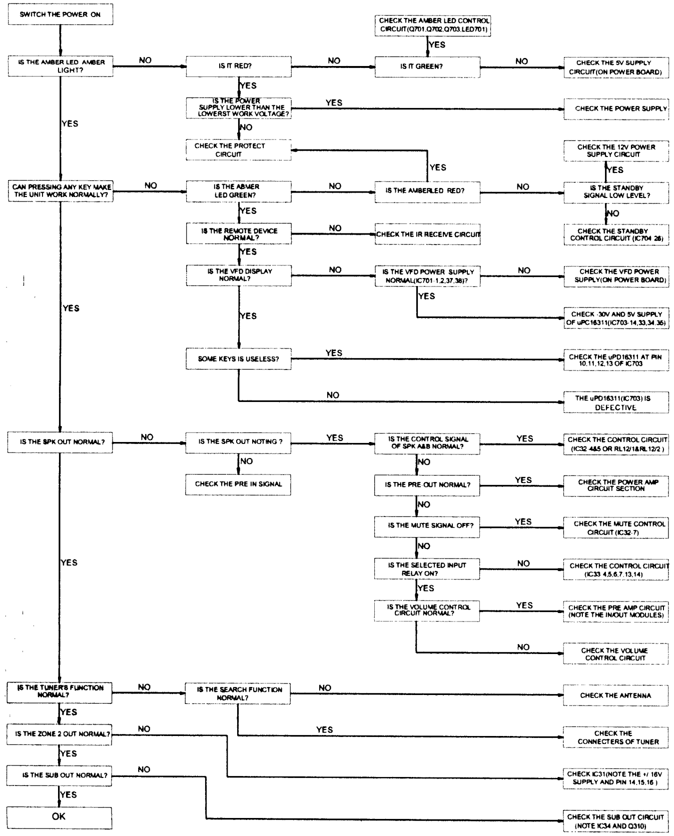

JK41
R459
R458
J401
CZ45
R
L
COPYRIGHT © 2004
NAD ELECTRONIC
NAD C720BEE
HEADPHONE BOARD Vm5.0

SPECIAL FUNCTION

TUNER SECTION	Simultaneously press "FM"+"CD": C-version (230V) factory reset
	Simultaneously press "FM"+"DISC": AH-version (120V) factory reset
	Simultaneously press "FM"+"AM": displays software version
	Press "AM"+"TAPE": all icons in the VFD DISPLAY light up

In addition, in tuner mode, press the "MEMORY" key once, and then press the "DISPLAY" key once.This will allow you to change the current display; to a familiar name, and it can be stored with the "MEMORY" key.

TROUBLESHOOTING GUIDE


SWITCH THE POWER ON
IS THE AMBER LED AMBER LIGHT?
NO
IS IT RED?
NO
IS IT GREEN?
NO
CHECK THE 5V SUPPLY CIRCUIT(ON POWER BOARD)
CHECK THE AMBER LED CONTROL CIRCUIT(Q701,Q702,Q703,LED701)
YES
YES
IS THE POWER SUPPLY LOWER THAN THE LOWERST WORK VOLTAGE?
YES
CHECK THE POWER SUPPLY
NO
CHECK THE PROTECT CIRCUIT
CHECK THE 12V POWER SUPPLY CIRCUIT
YES
YES
YES
CAN PRESSING ANY KEY MAKE THE UNIT WORK NORMALLY?
NO
IS THE ABMER LED GREEN?
NO
IS THE AMBERLED RED?
NO
IS THE STANDBY SIGNAL LOW LEVEL?
YES
NO
IS THE REMOTE DEVICE NORMAL?
NO
CHECK THE IR RECEIVE CIRCUIT
CHECK THE STANDBY CONTROL CIRCUIT (IC704 28)
YES
IS THE VFD DISPLAY NORMAL?
NO
IS THE VFD POWER SUPPLY NORMAL(IC701-1,2,37,38)?
NO
CHECK THE VFD POWER SUPPLY(ON POWER BOARD)
YES
CHECK -30V AND 5V SUPPLY OF uPC16311(IC703-14,33,34,35)
YES
YES
SOME KEYS IS USELESS?
YES
CHECK THE uPD16311 AT PIN 10,11,12,13 OF IC703
NO
THE uPD16311(IC703) IS DEFECTIVE
IS THE SPK OUT NORMAL?
NO
IS THE SPK OUT NOTING ?
YES
IS THE CONTROL SIGNAL OF SPK A&B NORMAL?
YES
CHECK THE CONTROL CIRCUIT (IC32-4&5 OR RL12/1&RL12/2)
NO
CHECK THE PRE IN SIGNAL
NO
IS THE PRE OUT NORMAL?
YES
CHECK THE POWER AMP CIRCUIT SECTION
NO
IS THE MUTE SIGNAL OFF?
YES
CHECK THE MUTE CONTROL CIRCUIT (IC32-7)
NO
IS THE SELECTED INPUT RELAY ON?
NO
CHECK THE CONTROL CIRCUIT (IC33 4,5,6,7,13,14)
YES
IS THE VOLUME CONTROL CIRCUIT NORMAL?
YES
CHECK THE PRE AMP CIRCUIT (NOTE THE IN/OUT MODULES)
NO
CHECK THE VOLUME CONTROL CIRCUIT
YES
IS THE TUNER'S FUNCTION NORMAL?
NO
IS THE SEARCH FUNCTION NORMAL?
NO
CHECK THE ANTENNA
YES
YES
CHECK THE CONNECTERS OF TUNER
IS THE ZONE 2 OUT NORMAL?
NO
CHECK IC31(NOTE THE +/ 16V SUPPLY AND PIN 14,15,16)
YES
IS THE SUB OUT NORMAL?
NO
CHECK THE SUB OUT CIRCUIT (NOTE IC34 AND Q310)
YES
OK

ELECTRIAL PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
PCB-1: MAIN BOARD		
	ICS	
IC3, IC4, IC34, IC43	03-00082-00	TL082CP/D
IC44	03-01237-00	UPC1237HA
IC32, IC33	03-04094-00	CD4094/HEF4094
IC31	03-07313-00	NJU7313AL
	DIODES	
D13, D14, D15, D16, D17, D23, D24, D25, D26, D27, D37, D38, D39, D310, D311, D312, D315, D42, D43, D403, D412, D413, D417, D418, D423, D428	33-44148-02	1N4148
D419, D420	33-44148-03	1N4148
D11, D12, D21, D22	33-14709-01	4.7V 0.5W
D313, D314	33-11600-01	16V 0.5W
D49	33-11800-01	18V 0.5W
D410, D411	33-12000-02	20V 0.5W
	TRANSISTORS	
Ql2, Q12/1, Q16, Q26, Q44, Q45, Q47, Q401, Q403, Q411	31-01015-00	2SA1015 GR
Ql1, Q11, Q17, Q21, Q27, Q33, Q34, Q35, Q36, Q37, Q38, Q39, Q43, Q46, Q48, Q402, Q404, Q412, Q414, Q416, Q417, Q421	31-01815-00	2SC1815 GR
Q12, Q15, Q22, Q25, Q102, Q104, Q202, Q204	31-00970-00	2SA970 GR
Q13, Q14, Q23, Q24, Q101, Q103, Q201, Q203	31-02240-00	2SC2240 GR
Q18, Q28	31-00647-00	2SB647A
Q19, Q29	31-00667-00	2SD667A
Q110, Q113, Q210, Q213, Q42	31-01220-00	KSA1220
Q111, Q112, Q211, Q212, Q116, Q216, Q41, Q413	31-02690-00	KSC2690
Q310	31-00363-00	2SK363
	CAPACITORS	
C18, C19, C28, C29, C45, C46	05-22012-00	22p/100V ±10%
C360	05-10112-01	100p/100V± 10%
C302, C303, C361	05-22112-01	220p/100V ±10%
C12, C22, C335, C336, C112, C113, C212, C213	05-47112-00	470p/100V ±10%
C438, C439, C440, C442	05-51112-00	510p/100V ±10%
C31, C32, C33, C34, C35, C36, C37, C38, C39, C310	24-10161-01	100p/63V, ±10%
C311, C312	24-12261-00	1n2/63V, ±10%
C3, C357, C358, C41, C443, C444	24-10461-00	0.1u/63V± 20%
C432	24-22461-00	0.22u/63V± 20%
C350	24-82161-00	820p/63V 10%
C349, C435, C436	24-10261-00	1n/63V 10%
C351, C352, C353, C354, C355, C356, C362	24-10361-03	10n/63V 10%

ELECTRIAL PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
C120, C220, C434	24-22312-04	22n/100V 10%
C119, C219, C327, C328	25-22361-05	22n/63V 5%
C118, C218	25-10461-04	0.1u/63V 5%
C17, C114, C115, C117, C27, C214, C215, C217, C319, C320, C321, C322, C337, C338, C345, C346, C411, C412,	25-10412-02	0.1u/100V 10%
C329, C330, C347	25-10461-07	0.1u/63V 5%
C331, C332, C348	25-22461-02	0.22u/63V 5%
C333, C334	25-95461-00	0.95u/63V 5%
C121, C122, C221, C222	25-10561-02	1u/63V 5%
C339, C340	06-10951-08	1u/50V 20%
C417, C418, C421	06-47951-00	4u7/50V 20%
C13, C14, C23, C24, C48, C415, C416, C425, C426, C428, C429, C430, C431, C301	06-10051-00	10u/50V 20%
C11, C21	06-10051-08	10u/50V 20%
C12/1, C47, C49, C110, C111, C210, C211, C323, C324, C410	06-47021-00	47u/25V 20%
C325, C326, C341, C342	06-47021-06	47u/25V 20%
C103, C104, C203, C204, C420	06-10111-00	100u/16V 20%
C15, C16, C25, C26	06-22161-00	220u/63V 20%
C43, C44	06-22151-00	220u/50V 20%
C413, C414	06-22131-00	220u/35V 20%
C422	06-33111-01	330u/16V 20%
C116, C216	06-22260-01	2200u/6.3V 20%
	RESISTORS	
R385, R386	07-10189-00	1.8Ω ±5% 1/6w
R154, R155, R254, R255	07-10100-10	10Ω ±5% 1/4w
R2	07-10100-00	10Ω ±5% 1/6w
RI3	07-10330-00	33Ω ±5% 1/6w
R115, R116, R215, R216	07-10330-10	33Ω ±5% 1/4w
R14, R24, R416, R417, R418, R419	07-10101-10	100Ω ±5% 1/4w
R363, RI6	07-10101-00	100Ω ±5% 1/6w
R138, R238	07-10391-10	390Ω ±5% 1/4w
R11, R139, R21, R239, R31, R310, R311, R312, R32, R33, R34, R35, R36, R37, R38 R39	07-10471-10	470Ω ±5% 1/4w
R454, R455	07-10511-10	510Ω ±5% 1/4w
R41, R42, R43, R44, R47, R48, R49, R410, R411, R413,	07-10681-10	680Ω ±5% 1/4w
R147, R247, R403, R405, R406, R407, R474, R476	07-10102-10	1KΩ ±5% 1/4w
RI2	07-10102-00	1KΩ ±5% 1/6w
R422, R423	07-10112-10	1.1KΩ ±5% 1/4w
R424, R425	07-10132-10	1.3KΩ ±5% 1/4w
R367, R368, R412	07-10202-10	2KΩ ±5% 1/4w
R158, R258, R414, R428, R440	07-10222-10	2.2KΩ ±5% 1/4w
RI4, R369, R370, R371, R372, R373, R374, R375, R376, R377, R378, R379, R380	07-10472-00	4.7KΩ ±5% 1/6w
R401, R482	07-10472-10	4.7KΩ ±5% 1/4w

ELECTRIAL PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
R429	07-10512-10	5.1KΩ ±5% 1/4w
R381	07-10512-00	5.1KΩ ±5% 1/6w
R480	07-10622-10	6.2KΩ ±5% 1/4w
R12/1	07-10682-10	6.8KΩ ±5% 1/4w
R402, R469, R470, R471, R404	07-10103-10	10KΩ ±5% 1/4w
R364, R365, R366, R449, R450, R493, R494, RI5	07-10103-00	10KΩ ±5% 1/6w
RI1	07-10123-00	12KΩ ±5% 1/6w
R148, R248, R441	07-10153-10	15KΩ ±5% 1/4w
R387, R388	07-10203-00	20KΩ ±5% 1/6w
R12/2, R15, R152, R25, R252, R337, R341, R349, R350, R351, R352, R353, R354, R355, R356, R357, R358, R382, R438, R468	07-10223-10	22KΩ ±5% 1/4w
R420, R421	07-10363-10	36KΩ ±5% 1/4w
R487, R488	07-10393-10	39kΩ ±5% 1/4w
R123, R223, R437, R473, R477	07-10473-10	47KΩ ±5% 1/4w
R442, R445, R446, R436	07-10563-10	56KΩ ±5% 1/4w
R448, R478, R479, R489, R490, R491	07-10104-10	100KΩ ±5% 1/4w
R12, R22, R345, R346, R457	07-10224-10	220KΩ ±5% 1/4w
R483, R451	07-10334-10	330KΩ ±5% 1/4w
R435	07-10394-10	390KΩ ±5% 1/4w
R156, R157, R256, R257, R472	07-10474-10	470KΩ ±5% 1/4w
R486	07-10564-10	560KΩ ±5% 1/4w
R142, R143, R242, R243	07-20220-10	22Ω ±5% 1/4w
R107, R108, R207, R208	07-20390-10	39Ω ±5% 1/4w
R103, R106, R111, R112, R120, R203, R206, R211, R212, R220, R219, R119	07-20820-10	82Ω ±5% 1/4w
R149, R249	07-21600-10	160Ω 1% 1/4w
R327, R328	07-20181-10	180Ω 5% 1/4w
R325, R326, R331, R332	07-23900-10	390Ω 1% 1/4w
R383, R384	07-25600-01	560Ω 2% 1/6w
R323, R324	07-27500-10	750Ω 1% 1/4w
R329， R330	07-21501-10	1.5KΩ ±1% 1/4w
R321, R322	07-23301-10	3.3KΩ 1% 1/4w
R359, R360	07-20512-10	5.1KΩ 5% 1/4w
R319, R320		N.I
R361, R362	07-21102-00	11KΩ ±1% 1/6w
R492	07-24701-00	4.7KΩ ±1% 1/6w
R121, R122, R221, R222	07-20104-10	100KΩ ±5% 1/4w
R102,R104,R202,R204	07-20224-10	220KΩ ±5% 1/4w
R340	07-20106-00	10MΩ ±5% 1/6w
R146, R246	07-24301-20	4.3KΩ 1% 1/2w
R19, R101, R105, R110, R29, R201, R205, R210	07-20393-10	39KΩ 5% 1/4w
R150, R250	07-30109-01	1Ω/1W 5%
R427	07-30220-01	22Ω/1W 5%
R452, R453	07-30221-03	220Ω/2W 5%
R128, R129, R228, R229	07-30331-00	330Ω/0.5W 5%
R124, R125, R224, R225	07-30339-00	3.3Ω/1/2W 5%
R126, R127, R226, R227	07-32701-02	2.7KΩ 2% 2w
R144, R145, R244, R245	07-40687-03	0.068Ω/3W 10%
R136, R137, R236, R237	07-50100-10	10Ω/1/4W 5%
R151, R251	07-50100-01	10Ω/1W 5%
R45, R46	07-50330-00	33Ω/0.5W 5%
R130, R131, R230, R231	07-50820-02	82Ω/1W 5%

ELECTRIAL PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
	INDUCTORS	
L11, L21	08-01010-00	1uH
	POTS	
RT31, RT32	09-01103-07	10KA
RT34	09-01203-06	20K MN
VR12, VR22	09-02301-00	300 Ω
VR301, VR302	09-02101-00	100 Ω
	SWITCHS	
SW31	11-02202-00	TONE DEFEAT
SW41	11-05202-12	SOFT CLIPPING
	RELAYS	
RL31, RL32, RL33, RL34 RL35, RL36	12-02101-02	JRC-27F/012/S
RL12/1, RL12/2	12-03102-00	JQX-115F/0242HS4AF
	CONNECTERS	
CZ34——CB31	14-72009-10	SCN 2.5A-9D XHB2.5A-9Y26AWG;UL2468#; 130mm
TP1, TP2, TP3, TP4	13-10001-00	Test-1(R)
CB47	13-22510-00	XHB 2.5A-10A
CB45	13-22503-00	XHB 2.5A-3A
CB49	13-23904-00	VH 3.96A-4A
CZ37	13-22508-00	XHB 2.5A-8A
CZ36	13-21217-00	FPC1.25 17PIN
CZ35	13-21219-00	FPC1.25 19PIN
PHONE1	17-02002-00	SCJ351P00XS0B00
	17-02002-01	ST-5037B-04
PHONE2	17-02001-03	SCJ349P00XS0B01
	17-02001-04	ST-323B-04
RCA31, RCA32, RCA33, RCA34	17-01004-05	4 holes red and white, gilt
RCA35	17-01001-11	1 hole red,AV-8.4-14,gilt
CB715	02-03005-20	C version
CB715	02-03005-10	AH version
	LINKS	
J7, J8, J9, J19, J20, J29, J30, J35, J37, J53, J62, J64 ,J65, J66, J67, J68, J71, J72, J104, J105, J109, J114, J115, J116, J117, J118, J119, J121, J122, J134, J136, J143, J147, J148, J157, J160, J162, J173, J175, J176, J178, J179, J182, J183, J189, J192, J200, J201, J202, J205, J206, J207, J208, J209, J210, J211, J212, J218, J219, J222, J223, J235, J236, J239, J244, J247, J258, J260, J262, J268, J271, J272, J273, J281, J283, J284, J293, J295, J297, J300, J302, J303, J304	21-06500-00	L=5mm

ELECTRIAL PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
J10, J11, J12, J13, J14, J21, J34, J38, J39, J40, J41, J43, J45, J46, J47, J48, J49, J50, J52, J55, J58, J59, J60, J85, J86, J87, J93, J94, J120, J123, J124, J125, J126, J127, J128, J129, J130, J131, J132, J137, J142, J158, J166, J167, J168, J177, J184, J190, J191, J193, J197, J203, J204, J220, J232, J233, J242, J243, J246, J248, J263, J264, J275, J301	21-06750-00	L=7.5mm
J4, J288, J296	21-10750-00	L=7.5mm
J6, J22, J33, J36, J51, J61, J98, J99, J100, J101, J102, J103, J106, J107, J108, J133, J135, J140, J141, J146, J169, J170, J172, J180, J196, J199, J213, J214, J215, J216, J217, J228, J230, J231, J238, J265, J266, J269, J270, J274, J282, J290, J291, J292, J294, J298, J299	21-06101-00	L=10mm
J159, J161, J165, J289	21-10101-00	L=10mm
J1, J23, J24, J25, J26, J27, J28, J31, J32, J44, J56, J144, J145, J149, J150, J174, J181, J185, J186, J188, J194, J195, J224, J267, J286, J287	21-06121-01	L=12.5mm
J2, J16, J17, J18, J54, J63, J74, J75, J76, J77, J78, J79, J80, J81, J82, J83, J84, J96, J97, J110, J112, J113, J139, J156, J171, J198, J226, J227, J245	21-06151-00	L=15mm
J5, J88	21-10151-00	L=15mm
J57, J111, J138, J151, J152, J153, J154, J155, J234, J259, J261, J279, J280	21-06201-00	L=20mm
J42, J89, J91, J163, J250, J251, J252, J253, J254, J276, J277, J278	21-10201-00	L=20mm
J15, J69, J70, J90, J92, J95, J164, J237, J240, J241, J285	21-06251-00	L=25mm
J73, J249, J255, J256, J257	21-10251-00	L=25mm
J3	21-10301-00	L=30mm
PCB-7:OUT MODULE ; PCB-8: IN MODULE		
CIRCUIT NO.	**PART NO.**	**DESCRIPTIONS**
	TRANSISTORS	
Q63, Q65	31-00970-00	2SA970 GR
Q64, Q66	31-00647-00	2SB647
Q67, Q68	31-00667-00	2SD667
Q61, Q62	31-00170-00	2SK170-BL
	DIODES	
D61, D62, D63, D64	33-44148-01	1N4148

ELECTRIAL PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
	CAPACITORS	
C63, C64	05-22012-01	22p/100V ±10%
C611	05-15012-00	15p/100V ±10%(OUT MODULE)
C611	05-40012-00	40p/100V ±10%(IN MODULE)
C610, C69	05-10112-00	100p/100V± 10%
C61, C62	05-22112-00	220p/100V ±10%
C65, C66, C67, C68	24-10461-00	0.1u/63V± 20%
	RESISTORS	
R617, R618, R619, R620	07-10100-00	10Ω ±5% 1/6w
R615, R616	07-10330-00	33Ω ±5% 1/6w
R621	07-10121-10	120Ω ±5% 1/4w
R61, R62	07-10221-00	220Ω ±5% 1/6w
R67, R68, R611, R612	07-10102-00	1KΩ ±5% 1/6w
R613, R614	07-10103-00	10KΩ ±5% 1/6w
R69, R610	07-24300-00	430Ω 1% 1/6w
R65, R66	07-25600-01	560Ω 2% 1/6w(IN MODULE)
R63, R64	07-20105-00	1M ±5% 1/6W
	CONNECTER	
CB61	13-12509-01	9PIN CONNECTER (IN MODULE TO CB32/ OUT MODULE TO CB33)
PCB-9: MUTE BOARD	**01-72008-00**	
CIRCUIT NO.	**PART NO.**	**DESCRIPTION**
	TRANSISTORS	
Q31, Q32, Q311, Q312	31-00108-01	PMBFJ108
	DIEDES	
D316, D317, D318, D319	33-44148-11	LL4148
	RESISTORS	
R335, R336	07-90680-01	68Ω ±5%
R317, R318	07-90471-01	470Ω ±5%
R333, R334,	07-90472-01	4.7KΩ ±5%
R347, R348, R391, R392	07-90104-01	100KΩ ±5%
R338, R339, R389, R390	07-90106-01	10MΩ ±5%
	CAPACITORS	
C317, C318	26-10151-01	100pF 50V ±5%
	CONNECTER	
CB34	13-12510-01	10PIN;glit
PCB-2: POWER BOARD		
CIRCUIT NO.	**PART NO.**	**DESCRIPTION**
	ICS	
IC51	03-01117-01	AMS1117-5.0/LM1117MPX-5.0
	TRANSISTORS	
Q59, Q510, Q517, Q519	31-01015-00	2SA1015 GR
Q518, Q520	31-01815-00	2SC1815 GR
Q58	31-01220-00	KSA1220
	DIODES	
D513	33-24004-02	1N4004
D52	33-11500-01	15V 0.5W
D501, D54, D56	33-30142-00	DB104
D51, D55	33-30822-00	8A/200V
D531, D532	33-60116-00	TIC116D/BT151-500R
D53	33-13000-02	30V 0.5W
	CAPACITORS	
C535	⚠ 05-47242-00	4n7p, 400V, ±20%
C56	⚠ 25-22422-03	MKP62, 275V, 0.22uF 5%
C53	06-33151-01	50V/330u 20%
C51, C52	25-10322-00	10n/250V 10%
C536	06-10111-00	100u/16V 20%
C524	06-22251-00	2200u/50V 20%
C533	06-47211-00	4700u/16V 20%
C523	06-33251-00	3300u/50V 20%
C517, C518	06-15351-01	15000u/50V 10%

ELECTRIAL PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
C55	06-10051-00	10u/50V 20%
	RESISTORS	
R561, R565	07-10101-10	100Ω ±5% 1/4w
R532	07-10221-10	220Ω ±5% 1/4w
R558, R559, R560, R562	07-10102-10	1KΩ ±5% 1/4w
R534	07-10222-10	2.2KΩ ±5% 1/4w
R566	07-10472-10	4.7KΩ ±5% 1/4w
R544, R563, R564	07-10223-10	22KΩ ±5% 1/4w
R533	07-10225-10	2.2MΩ ±5% 1/4w
R531	07-40507-03	0.05Ω/3W 5%
R567	07-10103-10	10KΩ ±5% 1/4w
R568	07-10332-10	3.3KΩ ±5% 1/4w
	FUSES	
F51, F52, F53, F54	⚠ 20-12632-00	T6.3AL250V-50T-063-H
F55	⚠ 20-12501-00	500mA/250V
	CONNECTERS	
CB55, CB56, CB58	⚠ 13-23903-01	VH 3.96A-3A
CB57	⚠ 13-23903-11	VH 3.96A-3A
CB54	⚠ 13-23904-00	VH 3.96A-4A
CB51	⚠ 13-23905-12	VH 3.96A-5A
CB52	⚠ 13-22507-10	7PIN
CB53——CB47	14-72010-00	SCN 2.5A-10D; XHB 2.5A-10Y; 26AWG UL2468# ;white; 150mm
	LINKS	
J52	21-06500-00	L=5mm
J53, J513, J514, J515	21-06750-00	L=7.5mm
J57	21-10750-00	L=7.5mm
J59, J510	21-06101-00	L=10mm
J55, J511	21-10101-00	L=10mm
J54, J58	21-10121-00	L=12mm
J51	21-06151-00	L=15mm
J56	21-10201-00	L=20mm
J512	21-10251-00	L=25mm
PCB-3: KEY BOARD		
CIRCUIT NO.	**PARTS NO**	**DESCRIPTION**
	ICS	
IC704	03-08955-12	AT89C55WD-24PC/24PI
IC704	13-22540-00	DIP-40
IC707	03-04094-00	CD4094/HEF4094
IC702	03-00038-40	HS0038B4
IC706	37-12122-00	EC12E1220801-F20
IC705	03-02464-00	AT24C64A-10PI-2.7
IC708	03-00810-02	TCM810MENB
	TRANSISTORS	
Q701, Q702, Q703, Q704, Q705, Q706, Q707, Q708, Q709, Q710, Q711, Q712	31-01815-00	2SC1815 GR
	DIODES	
D701, D702, D703, D704, D705, D706, D707, D716	33-44148-03	1N4148
D708, D709, D710, D711, D712, D713, D714, D715	33-50550-00	L-513GD
LED701	33-50525-00	515AW COM-Cathode
	CRYSTAL	
Y701	04-11102-00	11.0592MHz, CL=15pF
	CAPACITORS	
C722	05-47912-00	4.7p/100V ±0.5p
C721	05-22012-00	22p/100V ±10%
C724, C725, C726	05-51112-00	510p/100V ±10%
C701, C702, C710, C711, C712, C713, C714, C715, C716	24-10312-00	10n/100V±20%

ELECTRIAL PARTS LIST

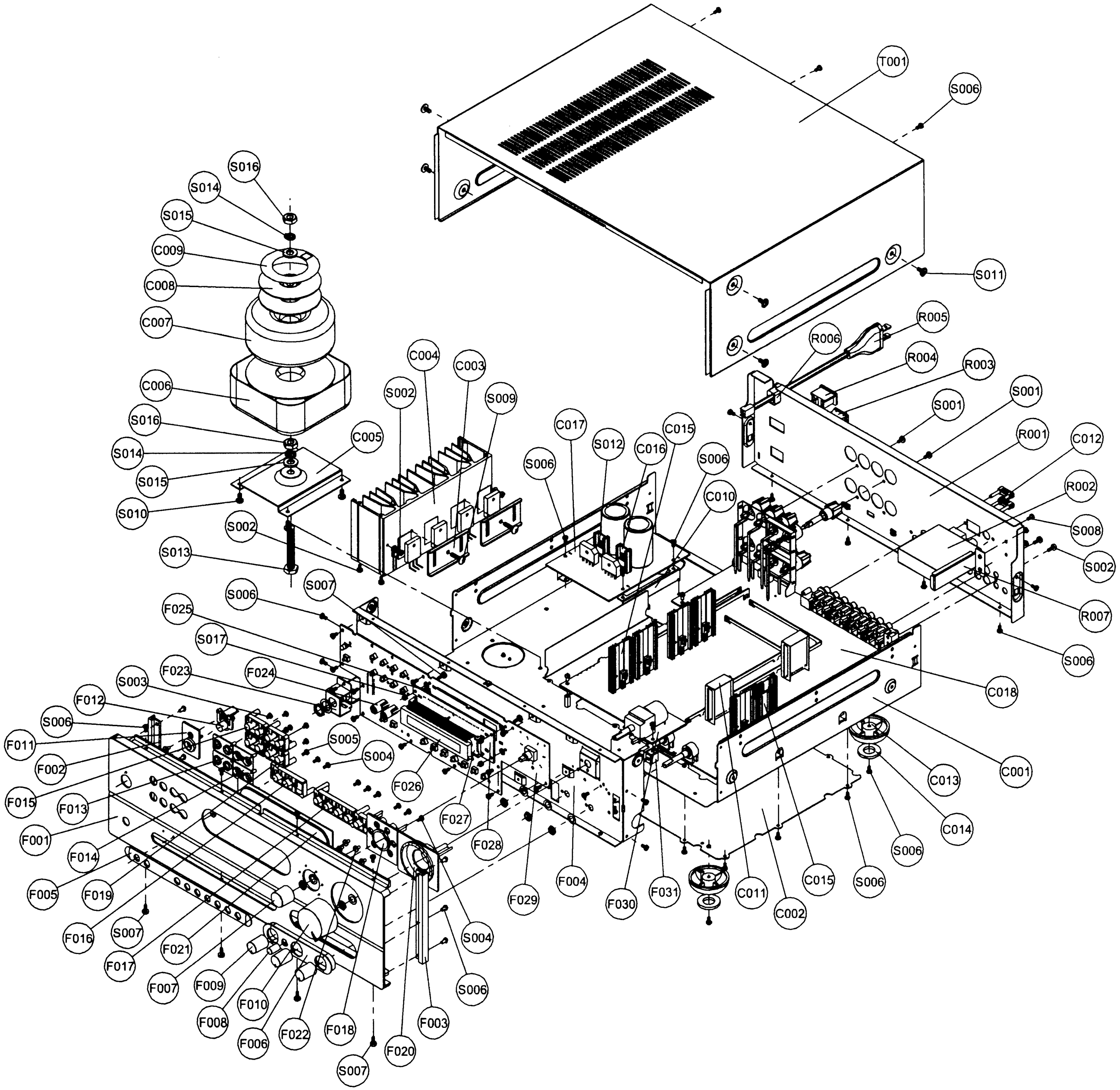
CIRCUIT NO.	PART NO.	DESCRIPTION
C704, C705, C706, C707, C708, C718, C719, C723	24-10461-00	0.1u/63V± 20%
C720	06-10051-00	10u/50V 20%
C717	06-10111-00	100u/16V 20%
	RESISTORS	
R718	07-10301-10	300Ω ±5% 1/4w
R717	07-10331-10	330Ω ±5% 1/4w
R742	07-10471-10	470Ω ±5% 1/4w
R710, R713	07-10821-10	820Ω ±5% 1/4w
R750, R751	07-10202-10	2KΩ ±5% 1/4w
R719, R720, R721, R722	07-10222-10	2.2KΩ ±5% 1/4w
R723, R724, R725, R726, R727, R728, R729, R730, R731, R732, R733, R734, R735, R736, R737, R738	07-10472-10	4.7KΩ ±5% 1/4w
R705, R706, R707, R708, R709, R711, R712, R714, R715, R716, R740, R743, R749	07-10103-10	10KΩ ±5% 1/4w
R739	07-10153-10	15KΩ ±5% 1/4w
R748	07-01002-09	10K, 2%, 9PIN
	SWITCHS	
S701, S702, S703, S704, S705, S706, S707, S708, S709, S710, S711, S712, S713, S714, S715, S716, S717, S718, S719	11-04101-00	Selector
	CONNECTERS	
CZ702	13-21219-00	19PIN
CZ701	13-22508-00	XHB 2.5A-8A
	LINKS	
J701, J735, J740, J742, J755	21-06500-00	L=5mm
J702, J703, J704, J705, J712, J727, J728, J730, J731, J733, J734, J738, J754	21-06750-00	L=7.5mm
J713, J722, J732, J736, J737, J739, J750	21-06101-00	L=10mm
J706, J707, J708, J753	21-06121-00	L=12mm
J741, J743, J744, J745, J751	21-06151-00	L=15mm
J709, J710, J711, J714, J715, J716, J717, J718, J719, J721, J746, J749	21-06201-00	L=20mm
J720, J723, J724, J725, J726, J729, J747, J748, J752	21-06251-00	L=25mm
PCB-4: VFD BOARD		
CIRCUIT NO.	**PART NO**	**DESCRIPTION**
	ICS	
IC703	03-16311-01(or)	Upd16311GC-AB6
IC701	36-01012-00	HNA-10SM12
	CAPACITORS	
C703	26-10451-01	100nZ,50V,Y5V 0805
	RESISTORS	
R701, R702, R703, R704, R744, R745, R746, R747	07-90103-01	10KΩ ±5% 1/8w
R741	07-90473-01	47KΩ ±5% 1/8w
	CONNECTERS	
CZ703	13-12518-00	2.5mm;2×9PIN ;13.7mm
PCB-5: POT BOARD		

ELECTRIAL PARTS LIST

CIRCUIT NO.	PART NO.	DESCRIPTION
CIRCUIT NO.	**PART NO.**	**DESCRIPTION**
	POT	
RT33	09-01203-05	20KB
	CONNECTER	
CB31	13-22509-00	9PIN; 2.5mm
PCB-9: HEADPHONE BOARD		
CIRCUIT NO.	**PART NO.**	**DESCRIPTION**
	RESISTORS	
R458, R459	07-30101-04	100Ω 2W ±5%
	CONNECTER	
JK41	17-02001-00	PH-2ASW
CZ45——CB45	14-72003-10	SCN 2.5A-3D;XHB 2.5A-3Y; 26AWG UL2468# ; WHITE; 400mm
	LINKS	
J401	21-06750-00	L=7.5mm
PCB-6: AC OUT BOARD		
CIRCUIT NO.	**PART NO.**	**DESCRIPTION**
	CONNECTER	
CB59	13-23903-01	VH 3.96A-3A(去掉中间针)
OTHERS		
CIRCUIT NO.	**PART NO.**	**DESCRIPTION**
TRANSFORMER	18-72151-20	TD-230-0150C (C VERSION)
TRANSFORMER	18-72151-10	TD-120-0150L (AH VERSION)
	CONNECTERS	
CB58——AC OUTPUT ⚠	14-72002-00	VH 3.96A-3Y; KST FDFD2-187(8); 18AWG; UL1672# ; RED; 100mm
CB58——CB59 ⚠	14-72002-01	VH 3.96A-3Y; 18AWG UL1672# ; RED; 100mm
CB56——POWER SWITCH ⚠	14-72002-02	VH 3.96A-3Y; KST FDFD2-187(8); 18AWG UL1672# ; RED; 130mm
CB49——CB54 ⚠	14-72004-00	VH 3.96A-4Y; 22AWG UL1672# ; 150mm
CZ37——CZ701	14-72008-10	XHB 2.5A-8Y; 26AWG UL2468# ; WHITE; 500mm
CZ36——TUNER	14-72017-10	FPC; 17PIN; 180mm
CZ35——CZ702	14-72019-00	FPC; 19PIN; 710mm
AC CORD（C） ⚠	15-02251-20	WB01HS-001
AC CORD（AH） ⚠	15-10121-10	WB05HS-001
AC Outlet ⚠	17-07002-20	A302-D006-0P
AC Outlet ⚠	17-07002-10	JY0647A
Rock Switch ⚠	11-01101-03	RF-1003-BB2
Ferrit Ring	19-26030-00	F5B RH 26*30*16
	TUNER	
TUNER MODULE	37-01140-23	KST-MB114MA0-23
TUNER MODULE	37-01141-23	KST-MB114MA1-23
TUNER ANTENNA（AM）	30-37300-10	LS0146BL-X000101-0
TUNER ANTENNA（FM）	30-37300-00	HAN-001
TV Matcher	30-87200-00	IF-11/ZB-6

NOTES:	AH	C
TRANSFORMER	TD-120-0150L	TD-230-0150C
AC CORE	WB05HS-001	WB01HS-001
TUNER MODULE	KST-MB114MA0-23	KST-MB114MA1-23

EXPLODED VIEW



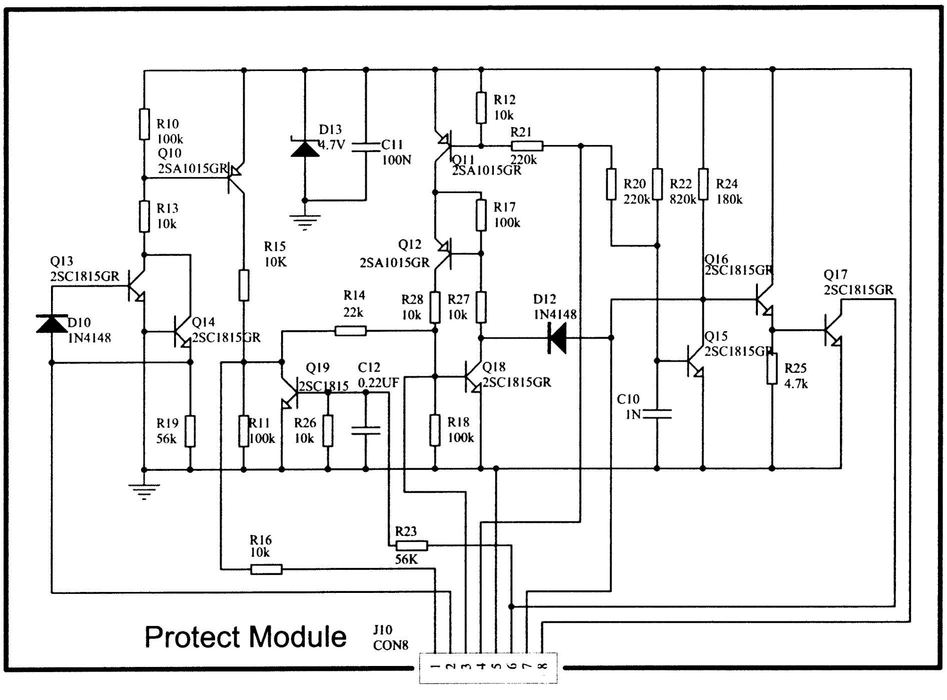
S016
S014
S015
C009
C008
C007
C006
S016
S014
S015
S010
S002
S013
C004
C003
S002
S009
C005
T001
S006
S011
R005
R006
R004
R003
S001
S001
R001
C012
R002
S008
S002
R007
S006
C017
S012
C016
C015
S006
C010
S006
S007
F025
S017
F024
F023
S003
F012
S006
F011
F002
F015
F013
F001
F014
F005
F019
F016
S007
F017
F021
F007
F009
F008
F010
F006
F022
F018
F020
S007
F003
S006
S004
S005
S004
F026
F027
F028
F029
F004
F030
F031
F011
C011
C002
C015
S006
S006
C014
C013
C001
C018
S006

EXPLODED VIEW PARTS LIST

REF.NO	PART NO.	DESCRIPTION	Qty.
C001	66-047001-1	Chassis	1
C002	66-047003-0	Service Cover	1
C003	66-001009-0	Clamper	2
C004	70-047001-1	Main Heat Sink	1
C005	66-001010-0	Transformer Bracket	1
C006	67-001011-0	Shielding Box	1
C007 ⚠	18-72151-20	C Version Transformer	1
⚠	18-72151-10	AH Version Transformer	1
C008	66-001008-0	Metal Disc	1
C009	94-001004-2	Label	1
C010	66-001007-0	PCB Support	1
C011	66-001011-0	Module Support	1
C012	30-63200-00	Shorting Plug	1
C013	75-010004-1	Foot	4
C014	78-001002-0	Foot Pad	4
C015	70-014002-2	Heatsink1	7
C016	70-001002-0	Heatsink2	2
C017	01-72002-00	Power Board	1
C018	01-72001-20	Main Board(C Version)	
	01-72001-10	Main Board(AH Version)	1
F001	67-047004-1	Fascia	1
F002	67-047005-0	End Cap L	1
F003	67-047006-0	End Cap R	1
F004	66-047002-1	Subfascia	1
F005	75-047003-0	Input Button Lozenge	1
F006	77-001001-1	Tone Control Lozenge	1
F007	75-047001-1	Selector Knob	1
F008	74-001001-1	Tone Defeat Button	1
F009	73-014001-1	Tone Knob	3
F010	73-014002-1	Volume Knob	1
F011	77-026001-0	Power Button Bezel	1
F012	77-026001-0	Power Button	1
F013	77-011004-1	Duo Bezel	2
F014	75-047005-0	Linked Goggle Bezel	2
F015	74-011001-1	Duo Buttons	4
F016	74-047001-0	Trio Buttons	2
F017	74-001008-0	Quad Buttons	1
F018	75-047002-0	Selector Knob Bezel	1
F019	75-003003-0	Bracket	2
F020	77-025001-1	Volume Knob Bezel	1
F021	76-011001-1	T172 Windows Lens	1
F022	76-003001-0	LED Lens	1
F023	66-018003-1	Phone Bracket	1

REF.NO	PART NO.	DESCRIPTION	Qty.
F024	75-005001-0	Sleeve	2
F025	66-011006-0	IR Bracket	1
F026	36-01012-00	VFD	1
F027	75-047004-0	VFD Bracket	1
F028	01-72003-01	VFD MODULE	1
F029	01-72003-00	KEY BOARD	1
F030	01-72005-00	POTS BOARD	1
F031	66-011011-0	Connectible Bracket	1
R001	67-047002-1	Rear Panel（AH）	1
	67-047003-1	Rear Panel（C）	1
R002	37-01140-23	Tuner(AH)	1
	37-01141-23	Tuner(C)	1
R003 ⚠	11-01101-03	Rock Switch	1
R004 ⚠	17-07002-20	AC Outlet（C）	1
⚠	17-07002-10	AC Outlet（AH）	1
R005 ⚠	15-02251-20	AC CORD（C）	1
⚠	15-10121-10	AC CORD（AH）	1
R006	84-001002-0	Relief Bushing	1
R007	66-047004-0	Tuner Bracket	1
T001	67-047001-0	Top cover	1
S001	61-023206-0	Self Taping Screws BTB3X6	4
S002	61-023208-0	Self Taping Screws BTB3X8	12 C:14
S003	61-022205-0	Self Taping Screws BTB2X5	8
S004	61-022206-6	Self Taping Screws BTB2.6X6	7
S005	61-022205-6	Self Taping Screws BTB2.6X5	2
S006	61-023106-0	Self Taping Screws STB3X6	58
S007	61-023108-0	Self Taping Screws STB3X8	8
S008	61-023506-0	Machine Screws MB3X6	4
S009	61-044514-0	Machine Screws MT4X14	2
S010	61-024108-0	Self Taping Screws STB4X8	4
S011	61-084108-0	Self Taping Screws STP4X8	6
S012	61-023204-0	Self Taping Screws BTB3X4	2
S013	64-108055-0	Bolt GB5781 M8X55	1
S014	63-020820-1	Spring Washer GB93(8)	2
S015	63-010816-0	Washer GB97(8)	2
S016	62-010802-0	Nut GB6170(M8)	2
S017	62-010302-1	Nylon Nut (M3)	4

PROTECT IC CHANGE


R10
100k
Q10
2SA1015GR
D13
4.7V
C11
100N
R12
10k
R21
220k
Q11
2SA1015GR
R13
10k
R20
220k
R22
820k
R24
180k
R17
100k
Q13
2SC1815GR
R15
10K
Q12
2SA1015GR
Q16
2SC1815GR
Q17
2SC1815GR
D10
1N4148
R14
22k
R28
10k
R27
10k
D12
1N4148
Q14
2SC1815GR
Q15
2SC1815GR
Q19
2SC1815
C12
0.22UF
Q18
2SC1815GR
R25
4.7k
C10
1N
R19
56k
R11
100k
R26
10k
R18
100k
R16
10k
R23
56K
Protect Module
J10
CON8
1 2 3 4 5 6 7 8

This Protect Module replaces Protection IC 44

Remove the part below:

R442 Remove 56K Ohm resistor.

Replace and change orientation for the part below:

C421 From 4.7uF/50V to 0.47uF/50V. Reverse mount the new C421

Change orientation for the part below:

D513 Reverse mount the 1N4004